

Applied Science &
Technology Index
1964

Abbreviations of Periodicals Indexed

For full information consult pages vii to x

- AIAA J**—AIAA Journal
AICHE J—Journal of the American Institute of Chemical Engineers
ASHRAE J—ASHRAE Journal
ASME Trans—Transactions of the American Society of Mechanical Engineers
Air Cond Heat & Ven—Air Conditioning, Heating and Ventilating
Aircraft Eng—Aircraft Engineering
Am Assn Pet Geologists Bul—Bulletin of the American Association of Petroleum Geologists
Am Cer Soc Bul—Bulletin of the American Ceramic Society
Am Cer Soc J—Journal of the American Ceramic Society
Am Chem Soc J—Journal of the American Chemical Society
Am Concrete Inst J—Journal of the American Concrete Institute
Am Dyestuff Rep—American Dyestuff Reporter
Am Gas Assn Mo—American Gas Association Monthly
Am Inst Chem Eng J. See **AICHE J**
Am J Clinical Nutrition—American Journal of Clinical Nutrition
Am J Phys—American Journal of Physics
Am J Pub Health—American Journal of Public Health and the Nation's Health
Am Mach—American Machinist
Am Mach/Metalworking Manuf—American Machinist/Metalworking Manufacturing
Am Mineralogist—American Mineralogist, Journal of the Mineralogical Society of America
Am Oil Chem Soc J—Journal of the American Oil Chemists' Society
Am Perfumer—American Perfumer and Cosmetics
Am Scientist—American Scientist
Am Soc C E Proc—Proceedings of the American Society of Civil Engineers
Am Soc Heat Refrig & Air-Cond Eng J. See **ASHRAE J**
Am Soc Mech Eng Trans. See **ASME Trans**
Am Water Works Assn J—Journal American Water Works Association
Anal Chem—Analytical Chemistry
Arch Forum—Architectural Forum, The Magazine of Building
Arch Rec—Architectural Record
Archives Environmental Health—Archives of Environmental Health
Assn for Computing Mach J—Journal of the Association for Computing Machinery
Astronautics & Aeronautics—Astronautics and Aeronautics
Astronautics & Aerospace Eng—Astronautics and Aerospace Engineering
Audio—Audio
Audio Eng Soc J—Journal of the Audio Engineering Society
Automation—Automation
Automobile Eng—Automobile Engineer
Automotive Ind—Automotive Industries

Bell Lab Rec—Bell Laboratories Record
Bell System Tech J—Bell System Technical Journal
Brit Plastics—British Plastics

Can Chem Process—Canadian Chemical Processing
Can J Chem Eng—Canadian Journal of Chemical Engineering
Can Min & Met Bul—Canadian Mining and Metallurgical Bulletin
Cer Ind—Ceramic Industry
Chem & Eng N—Chemical and Engineering News

Chem & Ind—Chemistry and Industry
Chem Eng—Chemical Engineering
Chem Eng Prog—Chemical Engineering Progress
Civil Eng—Civil Engineering, the Magazine of Engineered Construction
Coal Age—Coal Age
Combustion—Combustion
Comp Air Mag—Compressed Air Magazine
Control Eng—Control Engineering
Corrosion—Corrosion

Diesel Equip Supt—Diesel Equipment Superintendent
Dom Eng—Domestic Engineering
Drug & Cosmetic Ind—Drug and Cosmetic Industry

Econ Geol—Economic Geology and the Bulletin of the Society of Economic Geologists
Elec Com—Electrical Communication
Elec Constr & Maint—Electrical Construction and Maintenance
Elec Eng—Electrical Engineering
Elec World—Electrical World
Electro-Tech—Electro-Technology
Electrochem Soc J—Journal of the Electrochemical Society
Electronic Eng—Electronic Engineering
Electronic Ind—Electronic Industries
Electronics—Electronics
Eng & Instrumentation. See **J Res Nat Bur Stand**
Eng & Min J—Engineering and Mining Journal
Eng J—Engineering Journal
Eng N—Engineering News-Record
Engineer—Engineer
Engineering—Engineering

Food Eng—Food Engineering
Food Tech—Food Technology
Foundry—Foundry
Franklin Inst J—Journal of the Franklin Institute
Fundamentals. See **Ind & Eng Chem**

Gas—Gas
Gas Age—Gas Age
Geol Soc Bul—Bulletin of the Geological Society of America
Geophysics—Geophysics
Glass Ind—Glass Industry

Heating-Piping—Heating, Piping and Air Conditioning
Hydraulics & Pneumatics—Hydraulics and Pneumatics
Hydrocarbon Process & Pet Refiner—Hydrocarbon Processing and Petroleum Refiner

IEEE Proc—Proceedings of the IEEE
IEEE Trans Applications & Ind—IEEE Transactions on Applications and Industry
IEEE Trans Com & Electronics—IEEE Transactions on Communication and Electronics
IEEE Trans Power Apparatus & Systems—IEEE Transactions on Power Apparatus and Systems
ISA J—ISA Journal
Illum Eng—Illuminating Engineering, The Journal of the Illuminating Engineering Society

ABBREVIATIONS OF PERIODICALS INDEXED

Ind & Eng Chem—Industrial and Engineering Chemistry

Ind Chem—Industrial Chemist

Ind Electronics—Industrial Electronics

Ind Finishing—Industrial Finishing

Ind Med—Industrial Medicine and Surgery

Ind Phot—Industrial Photography

Ind Quality Control—Industrial Quality Control

Inland Ptr/Am Lithogr—Inland Printer/American Lithographer

Inst E E Proc—Proceedings of the Institution of Electrical Engineers

Inst Mech Eng Proc—Proceedings of the Institution of Mechanical Engineers

Inst Metals J—Journal of the Institute of Metals

Inst Pet J—Journal of the Institute of Petroleum

Instrument Soc Am J. See ISA J

Instruments & Control Systems—Instruments and Control Systems

Iron Age—Iron Age

Iron & Steel Eng—Iron and Steel Engineer

Iron & Steel Inst J—Journal of the Iron and Steel Institute

J Agri & Food Chem—Journal of Agricultural and Food Chemistry

J Ap Chem—Journal of Applied Chemistry

J Ap Mech. See ASME Trans

J Ap Phys—Journal of Applied Physics

J Basic Eng. See ASME Trans

J Colloid Sci—Journal of Colloid Science

J Eng Ind. See ASME Trans

J Eng Power. See ASME Trans

J Geol—Journal of Geology

J Heat Transfer. See ASME Trans

J Math & Phys—Journal of Mathematics and Physics

J Metals—Journal of Metals

J Nutrition—Journal of Nutrition

J Pet Tech—Journal of Petroleum Technology

J Res Nat Bur Stand—Journal of Research of the National Bureau of Standards

J Sci Instr—Journal of Scientific Instruments

Light Metal Age—Light Metal Age

Lub Eng—Lubrication Engineering

Mach—Machinery

Machine Design—Machine Design

Mag of Stand—Magazine of Standards

Manuf Chem—Manufacturing Chemist and Aerosol News

Marine Eng/Log—Marine Engineering/Log

Materials in Design Eng—Materials in Design Engineering

Materials Res & Stand—Materials Research & Standards

Math & Math Phys. See J Res Nat Bur Stand

Mech Eng—Mechanical Engineering

Metal Finishing—Metal Finishing

Metal Prog—Metal Progress

Metallurgia—Metallurgia, the British Journal of Metals

Mill & Factory—Mill & Factory

Min Cong J—Mining Congress Journal

Min Eng—Mining Engineering

Mod Materials Handling—Modern Materials Handling

Mod Metals—Modern Metals

Mod Phot—Modern Photography

Mod Plastics—Modern Plastics

Mod Textiles Mag—Modern Textiles Magazine

Naval Eng J—Naval Engineers Journal

Nucleonics—Nucleonics

Oil & Gas J—Oil and Gas Journal

Op Res—Operations Research

Paper Ind—Paper Industry

Pet Management—Petroleum Management

Phys & Chem. See J Res Nat Bur Stand

Phys Today—Physics Today

Pit & Quarry—Pit and Quarry

Plant Eng—Plant Engineering

Plastics Tech—Plastics Technology

Plastics World—Plastics World

Plating—Plating

Power—Power

Power Eng—Power Engineering

Proc Design. See Ind & Eng Chem

Product Eng—Product Engineering

Product Res & Develop. See Ind & Eng Chem

Prog Arch—Progressive Architecture

Pub Roads—Public Roads

Pub Works—Public Works

Q S T—QST

RCA R—RCA Review

R Sci Instr—Review of Scientific Instruments

Radio & Electronic Eng—Radio and Electronic Engineer

Radio Corp Am R. See RCA R

Radio-Electronics—Radio-Electronics

Radio Propagation. See J Res Nat Bur Stand

Radio Science. See J Res Nat Bur Stand

Res/Develop—Research/Development

Roads & Sts—Roads and Streets

Rock Prod—Rock Products

Roy Aeronautical Soc J—Journal of the Royal Aeronautical Society

Rubber Age—Rubber Age

Rubber Chem & Tech—Rubber Chemistry and Technology

Rubber World—Rubber World

SAE J—SAE Journal

SMPTE J—Journal of the Society of Motion Picture and Television Engineers

Safety Maint—Safety Maintenance

Sci Am—Scientific American

Soap & Chem Spec—Soap and Chemical Specialties

Soc Automotive Eng J. See SAE J

Soc Dyers & Col J—Journal of the Society of Dyers and Colourists

Soc Motion Picture & Tv Eng J. See SMPTE J

Sound—Sound; Its Uses and Control

Space/Aeronautics—Space/Aeronautics

Steel—Steel

Tappi—Tappi

Tech Assn Pulp & Paper Ind. See Tappi

Textile Ind—Textile Industries

Textile Res J—Textile Research Journal

Textile World—Textile World

Tool & Manuf Eng—Tool and Manufacturing Engineer

Traffic Q—Traffic Quarterly

WPCF J—Journal of the Water Pollution Control Federation

Water & Sewage Works—Water & Sewage Works

Water Works & Wastes Eng—Water Works and Wastes Engineering

Water Works Eng—Water Works Engineering

Welding Eng—Welding Engineer

Welding J—Welding Journal

Westinghouse Eng—Westinghouse Engineer

Wire & Wire Prod—Wire and Wire Products

Wireless World—Wireless World

APPLIED SCIENCE & TECHNOLOGY INDEX

1964

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ELSA TOOM

INDEXERS

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CHARLOTTE TRILLING



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E. T.

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Q S T—QST

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 Welding Eng—Welding Engineer
 Welding J—Welding Journal
 Westinghouse Eng—Westinghouse Engineer
 Wire & Wire Prod—Wire and Wire Products
 Wireless World—Wireless World

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- AIAA Journal.** \$30 m American Institute of Aeronautics and Astronautics, Inc, 1290 Avenue of the Americas, New York 10019
- AIChE Journal.** \$25 bi-m American Institute of Chemical Engineers, 345 E 47th St, New York 10017
- ASHRAE Journal.** \$10 m American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc, 345 E 47th St, New York 10017
- ASME Transactions.** \$15 American Society of Mechanical Engineers, 345 E 47th St, New York 10017
Published in 5 parts: ser A, Journal of Engineering for Power, q (Ja); ser B, Journal of Engineering for Industry, q (F); ser C, Journal of Heat Transfer, q (E); ser D, Journal of Basic Engineering, q (Mr); ser E, Journal of Applied Mechanics, q (Mr)
\$7.50 to members and affiliates
- Air Conditioning, Heating and Ventilating.** \$7 m Industrial Press, 93 Worth St, New York 10013
- Aircraft Engineering.** 48s; U.S. \$7.50; Canada \$7.50 m Bunhill Publications, Ltd, 4 Ludgate Circus, London, E.C. 4
- American Association of Petroleum Geologists Bulletin.** \$30 m American Association of Petroleum Geologists, Inc, Box 979, Tulsa Okla. 74101
- American Ceramic Society Bulletin.** \$6 m American Ceramic Society, 4055 N High St, Columbus, Ohio 43214
- American Ceramic Society Journal; Ceramic Abstracts.** \$25 including Ceramic Bulletin m American Ceramic Society, 4055 N High St, Columbus, Ohio 43214
- American Chemical Society Journal.** \$26 s-m American Chemical Society, 1155 16th St, N.W., Washington, D.C. 20036
- American Concrete Institute Journal.** \$18 m American Concrete Institute, P.O. Box 4754 Redford Station, Detroit, Mich. 48219
- American Dyestuff Reporter.** \$7.50 bi-w Howes Pub. Co., Inc, 44 E 23d St, New York 10010
- American Gas Association Monthly.** \$5 m (bi-m Jt-Ag) American Gas Assn, Inc, 605 Third Av, New York 10016
- American Institute of Chemical Engineers Journal.** See A I Ch E Journal
- American Journal of Clinical Nutrition.** \$15 m The American Journal of Clinical Nutrition, Inc, 466 Lexington Av, New York 10017
- American Journal of Physics.** \$12.50 m American Institute of Physics, Inc, 335 E 46th St, New York 10017
- American Journal of Public Health and the Nation's Health.** \$15 m American Public Health Association, Inc, 1790 Broadway, New York 10019
- American Machinist.** \$20 bi-w McGraw-Hill, Inc, 330 W 42d St, New York 10036
Formerly American Machinist/Metalworking Manufacturing; changed January 6, 1964
- American Machinist/Metalworking Manufacturing.** \$3 bi-w McGraw-Hill Pub. Co., Inc, 330 W 42d St, New York 10036
Name changed to American Machinist January 6, 1964
- American Mineralogist, Journal of the Mineralogical Society of America.** bi-m U.S. Geological Survey, Washington, D.C. 20242
- American Oil Chemists' Society Journal.** \$12 m American Oil Chemists' Society, 35 E Wacker Drive, Chicago 60601
- American Perfumer and Cosmetics.** \$5 m Allured Pub. Corp, 1031 South Blvd, Oak Park, Ill. 60302
- American Scientist.** \$3.50 q Sigma Xi, 51 Prospect St, New Haven, Conn. 06511
- American Society of Civil Engineers Proceedings.** m American Society of Civil Engineers, 345 E 47th St, New York 10017
- American Society of Heating, Refrigerating and Air-Conditioning Engineers Journal.** See ASHRAE Journal
- American Society of Mechanical Engineers Transactions.** See ASME Transactions
- American Water Works Association Journal.** m American Water Works Assn, Inc, 2 Park Av, New York 10016
- Analytical Chemistry.** \$5 m American Chemical Society, 1155 16th St, N.W., Washington, D.C. 20036
- Architectural Forum.** The Magazine of Building, \$7 m Time, Inc, 540 N. Michigan Av, Chicago, Ill. 60611
Discontinued with August-September 1964 number
- Architectural Record.** \$5.50 m McGraw-Hill Publications, 330 W 42d St, New York 10036
Extra number published in Mid-May
- Archives of Environmental Health.** \$12 m American Medical Association, 535 N Dearborn St, Chicago 60610
- Association for Computing Machinery Journal.** \$15 q Association for Computing Machinery, 211 E 43d St, New York 10017
- Astronautics & Aeronautics.** m American Institute of Aeronautics and Astronautics, 1290 Avenue of the Americas, New York 10019
Price on request
Formerly Astronautics and Aerospace Engineering; changed January, 1964
- Astronautics and Aerospace Engineering.** \$10 m American Institute of Aeronautics and Astronautics, 500 Fifth Av, New York 10036
Name changed to Astronautics & Aeronautics, January, 1964
- Audio.** \$5 m Radio Magazines, Inc, 204 Front St, Mineola, New York 11501
- Audio Engineering Society Journal.** \$11 q Audio Engineering Society, P.O. Box 383, Madison Square Station, New York 10010
- Automation.** \$10 m Penton Pub. Co. Penton Bldg, Cleveland 44113
- Automobile Engineer.** £4 5s; U.S. \$12; Canada \$12 m Iliffe Transport Publications, Ltd, Dorset House, Stamford St, London, S.E. 1
Extra number published in May
- Automotive Industries.** \$10 s-m Chilton Co. Chestnut & 56th Sts, Philadelphia 19139
- Bell Laboratories Record.** \$2 m Bell Telephone Laboratories, Inc, 463 West St, New York 10014
- Bell System Technical Journal.** \$5 10 times a yr American Telephone and Telegraph Co, 195 Broadway, New York 10007
Published bi-monthly in 1964; changed January, 1965
- British Plastics.** £3 10s; U.S. \$11.50 Canada \$11.50 m Iliffe Industrial Publications, Ltd, Dorset House, Stamford St, London, S.E. 1
- Canadian Chemical Processing.** \$6; U.S. \$10 m Southam Business Publications, Ltd, 1450 Don Mills Rd, Don Mills, Ontario, Canada 416
- Canadian Journal of Chemical Engineering.** \$20; U.S. \$22.50 bi-m Chemical Institute of Canada, 48 Rideau St, Ottawa 2, Ont.
- Canadian Mining and Metallurgical Bulletin.** \$10; U.S. \$12 m Canadian Institute of Mining and Metallurgy, 906 Drummond Bldg, Montreal, Que.
- Ceramic Industry.** \$5 m Cahners Pub. Co. Inc, 5 So Wabash Av, Chicago 60603
- Chemical & Engineering News.** \$6 w American Chemical Society, 1155 16th St, N.W., Washington, D.C. 20036
- Chemical Engineering.** \$3 bi-w McGraw-Hill Inc, 330 W 42d St, New York 10036
- Chemical Engineering Progress.** \$25 m American Institute of Chemical Engineers, 345 E 47th St, New York 10017
- Chemistry and Industry.** £6 w Society of Chemical Industry, 14 Belgrave Square, London, S.W. 1
- Civil Engineering, the Magazine of Engineered Construction.** \$5 m American Society of Civil Engineers, 345 E 47th St, New York 10017
- Coal Age.** \$3 m McGraw-Hill, Inc, 330 W 42d St, New York 10036
- Combustion.** \$4 m Combustion Pub. Co., Inc, 277 Park Av, New York 10017
- Compressed Air Magazine.** \$5 m Compressed Air Magazine Co, 942 Memorial Parkway, Phillipsburg, N.J. 08865
- Control Engineering.** \$3 m McGraw-Hill, Inc, 330 W 42d St, New York 10036
- Corrosion.** \$10 m National Association of Corrosion Engineers, Inc, 980 M & M Bldg, Houston, Tex. 77002

- Diesel Equipment Superintendent.** \$4 m Diesel Publications, Inc, 80 Lincoln Av, Stamford, Conn. 06904
- Domestic Engineering.** \$5 m Medalist Publications, Inc, 1801 Prairie Av, Chicago 60616
- Drug & Cosmetic Industry.** \$3 m Drug Markets, Inc, 101 W 31st St, New York 10001
- Economic Geology and the Bulletin of the Society of Economic Geologists.** \$3.50 s-q Economic Geology Pub. Co, M. M. Leighton, Business Mgr, Urbana, Ill. 61801
- Electrical Communication.** \$2 q International Telephone and Telegraph Corp, 320 Park Av, New York 10022
- Electrical Construction and Maintenance.** \$3 m McGraw-Hill, Inc, 330 W 42d St, New York 10036
- Electrical Engineering.** \$12 m Institute of Electrical and Electronics Engineers, Inc, 345 E 47th St, New York 10017
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- Electrical World.** \$8 w McGraw-Hill, Inc, 330 W 42d St, New York 10036
- Electro-Technology.** \$15 m Conover-Mast Publications, Inc, 205 E 42d St, New York 10017
- Electrochemical Society Journal.** \$24 m Electrochemical Society, 30 E 42d St, New York 10017
- Electronic Engineering.** £1 16s; U.S. \$5; Canada \$5 m Morgan Brothers Ltd, 28 Essex St, Strand, London, W.C. 2
- Electronic Industries.** \$10 m Chilton Co, Chestnut & 56th Sts, Philadelphia 19139
- Electronics.** \$6 bi-w McGraw-Hill, Inc, 330 W 42d St, New York 10036
Changed to bi-weekly beginning April 6, 1964
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- Engineer.** £5 10s; U.S. \$16 w Morgan Brothers, Ltd, 28 Essex St, Strand, London, W.C. 2
- Engineering.** £5 10s w Engineering Ltd, 36 Bedford St, London, W.C. 2
- Engineering and Instrumentation.** See Journal of Research of the National Bureau of Standards
- Engineering and Mining Journal.** \$4 m McGraw-Hill, Inc, 330 W 42d St, New York 10036
- Engineering Journal.** \$6 m Engineering Institute of Canada, 2050 Mansfield St, Montreal 2, Que.
- Engineering News-Record.** \$6 w McGraw-Hill, Inc, 330 W 42d St, New York 10036
- Food Engineering.** \$2 m Chilton Co, Chestnut & 56th Sts, Philadelphia 19139
- Food Technology.** \$14.50 m Institute of Food Technologists, 176 West Adams St, Chicago 60603
- Foundry.** \$10 m Penton Pub. Co, Penton Bldg, Cleveland 44113
- Franklin Institute Journal.** \$20 m Franklin Institute of the State of Pennsylvania, Benjamin Franklin Parkway at 20th St, Philadelphia 19103
- Fundamentals.** See Industrial and Engineering Chemistry
- Gas.** \$15 m Chilton Co, 56th & Chestnut Sts, Philadelphia 19139
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- Geological Society of America Bulletin.** \$25 m Geological Society of America, 231 E 46th St, New York 10017
- Geophysics.** \$10 bi-m Society of Exploration Geophysicists, Howard R. Breck, Business Manager, Shell Bldg, Tulsa, Okla. 74119
- Glass Industry.** \$6 m Glass Pub. Co, Inc, 777 Lexington Av, New York 10017
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- IEEE Proceedings.** \$22 m Institute of Electrical and Electronics Engineers, Inc, 345 E 47th St, New York 10017
- IEEE Transactions on Applications and Industry.** \$10 bi-m Institute of Electrical and Electronics Engineers, Inc, 345 E 47th St, New York 10017
Discontinued with the November 1964 number
- IEEE Transactions on Communication and Electronics.** \$17 bi-m Institute of Electrical and Electronics Engineers, Inc, 345 E 47th St, New York 10017
Discontinued with the November 1964 number
- IEEE Transactions on Power Apparatus and Systems.** \$17 m Institute of Electrical and Electronics Engineers, Inc, 345 E 47th St, New York 10017
- ISA Journal.** \$4 m Instrument Society of America, Penn-Sheraton Hotel, 530 William Penn Pl, Pittsburgh 15219
- Illuminating Engineering, the Journal of the Illuminating Engineering Society.** \$18 m Illuminating Engineering Society, 345 E 47th St, New York 10017
- Industrial and Engineering Chemistry.** III American Chemical Society, 1155 16th St, N.W. Washington, D.C. 20036
Sold only in combination with one or more I&EC quarterlies: Process Design and Development (Ja); Fundamentals (Fr); Product Research and Development (Mr) One quarterly \$5; two \$8.50; three \$12 Subscriptions must begin with January and end with December
- Industrial Chemist.** 50s m Tothill Press, Ltd, 33 Tothill St, Westminster, London, S.W. 1
Discontinued with the May 1964 number
- Industrial Electronics.** £3; U.S. and Canada \$10 m Iliffe Electrical Publications, Ltd, Dorset House, Stamford St, London, S.E. 1
- Industrial Finishing.** \$3 m Practical Publications, Inc, 1142 N. Meridian St, Indianapolis 46204
- Industrial Medicine and Surgery.** \$6 m Industrial Medicine Pub. Co, P.O. Box 306, Tamiami Station, Miami, Fla. 33144
- Industrial Photography.** \$6 m United Business Publications, Inc, 200 Madison Av, New York 10016
- Industrial Quality Control.** m American Society for Quality Control, Inc, 161 W Wisconsin Av, Milwaukee 53203
- Inland Printer/American Lithographer.** \$5 m Maclean-Hunter Pub. Corp, 79 W Monroe St, Chicago 60603
- Institute of Metals Journal.** separate papers Institute of Metals, 17 Belgrave Square, London, S.W. 1
- Institute of Petroleum Journal.** £6 6s m Institute of Petroleum, 61 New Cavendish St, London, W. 1
- Institution of Electrical Engineers Proceedings.** £12 m The Institution, Savoy Place, London, W.C. 2
- Institution of Mechanical Engineers Proceedings.** separate papers Institution of Mechanical Engineers, 1 Birdcage Walk, Westminster, London, S.W. 1
- Instrument Society of America Journal.** See ISA Journal
- Instruments and Control Systems.** \$4 m Instruments Pub. Co, Inc, 845 Ridge Av, Pittsburgh 15212
- Iron Age.** \$25 w Chilton Co, Inc, Chestnut & 56th Sts, Philadelphia 19139
- Iron and Steel Engineer.** \$7.50 m Association of Iron and Steel Engineers, 1010 Empire Bldg, Pittsburgh 15222
- Iron and Steel Institute Journal.** £24 m Iron and Steel Institute, 4 Grosvenor Gardens, London, S.W. 1
- Journal of Agricultural and Food Chemistry.** \$20 bi-m American Chemical Society, 1155 16th St, N.W. Washington, D.C. 20036
- Journal of Applied Chemistry.** £15 m Society of Chemical Industry, 14 Belgrave Square, London, S.W. 1
- Journal of Applied Mechanics.** See ASME Transactions
- Journal of Applied Physics.** \$20 m American Institute of Physics, 335 E 45th St, New York 10017
\$15 to members and associate members of the American Institute of Physics
- Journal of Basic Engineering.** See ASME Transactions
- Journal of Colloid Science.** \$28 9 times a yr Academic Press Inc, 111 5th Av, New York 10003
- Journal of Engineering for Industry.** See ASME Transactions
- Journal of Engineering for Power.** See ASME Transactions
- Journal of Geology.** \$14 bi-m University of Chicago Press, 5750 Ellis Av, Chicago 60637
- Journal of Heat Transfer.** See ASME Transactions
- Journal of Mathematics and Physics.** \$8 q Massachusetts Institute of Technology, Cambridge, Mass. 02139

- Journal of Metals.** \$10 m American Institute of Mining, Metallurgical and Petroleum Engineers, Inc. 345 E 47th St. New York 10017
- Journal of Nutrition.** \$22.50 m Wistar Institute of Anatomy and Biology. 36th St at Spruce, Philadelphia 19104
- Journal of Petroleum Technology.** \$8 m Society of Petroleum Engineers of AIIME, 6300 North Central Expressway, Dallas 75206
- Journal of Research of the National Bureau of Standards.** Superintendent of Documents, Washington, D.C. 20402
- Published in 4 sections: A. Physics and Chemistry \$4 bi-m; B. Mathematics and Mathematical Physics \$2.25 q; C. Engineering and Instrumentation \$2.25 q; D. Radio Science \$9 m
- Section D, formerly Radio Propagation; changed January 1964 and became monthly
- Journal of Scientific Instruments.** £8 m Institute of Physics and the Physical Society, 47 Belgrave Square, London, S.W. 1
- Light Metal Age.** \$5 bi-m Roy Fellow, Jr. 693 Mission St. San Francisco 94105
- Lubrication Engineering.** \$11 m American Society of Lubrication Engineers, 838 Busse Highway, Park Ridge, Ill. 60068
- Machine Design.** \$10 bi-w Penton Pub. Co. Penton Bldg, Cleveland 44113
- Machinery.** \$10 m Industrial Press, 93 Worth St. New York 10013
- Magazine of Standards.** \$7 m American Standards Association, Inc. 10 E 40th St. New York 10016
- Manufacturing Chemist and Aerosol News.** £4: U.S. \$12 m Grampian Press, Ltd. The Tower, 229-243 Shepherds Bush Road, London, W.6
- Marine Engineering/Log.** \$4 m (s-m in June) Simmons-Boardman Pub. Corp. 30 Church St. New York 10007
- Materials in Design Engineering.** \$3 m Reinhold Pub. Corp. 430 Park Av. New York 10022
- Extra number published in Mid-October
- Materials Research & Standards.** \$5 m American Society for Testing Materials, 1916 Race St. Philadelphia 19103
- Mathematics and Mathematical Physics.** See Journal of Research of the National Bureau of Standards
- Mechanical Engineering.** \$7 m American Society of Mechanical Engineers, 345 E 47th St. New York 10017
- Metal Finishing.** \$5 m Metals and Plastics Publications, Inc. 99 Kinderkamack Road, Westwood, N.J. 07675
- Metal Progress.** \$9 m American Society for Metals, Metals Park, Ohio 44072
- Metallurgia, the British Journal of Metals.** 30s m Kennedy Press, Ltd. 31 King St. W. Manchester 3
- Mill & Factory.** \$10 m Conover-Mast Publications, Inc. 205 E 42d St. New York 10017
- Mining Congress Journal.** \$3 m American Mining Congress, Ring Bldg, Washington, D.C. 20036
- Mining Engineering.** \$10 m American Institute of Mining, Metallurgical and Petroleum Engineers, Inc. 345 E 47th St. New York 10017
- Modern Materials Handling.** \$8 m Cahners Pub. Co. Inc. 221 Columbus Av. Boston 02116
- Modern Metals.** \$10 m Modern Metals Pub. Co. 435 N. Michigan Av. Chicago 60611
- Modern Photography.** \$5 m Modern Photography, 165 W 46th St. New York 10036
- Modern Plastics.** \$8 m McGraw-Hill, Inc. 330 W 42d St. New York 10036
- Extra number, Encyclopedia issue September
- Modern Textiles Magazine.** \$5 m Rayon Pub. Corp. 303 Fifth Av. New York 10016
- Naval Engineers Journal.** \$20 bi-m American Society of Naval Engineers, Inc. 1012 14th St. N.W. Washington, D.C. 20005
- Nucleonics.** \$8 m McGraw-Hill, Inc. 330 W 42d St. New York 10036
- Oil and Gas Journal.** \$7 m Petroleum Pub. Co. 211 South Cheyenne, Tulsa, Okla. 74101
- Operations Research.** \$10 bi-m Operations Research Society of America, Mt Royal and Guilford Aves, Baltimore 21202
- Paper Industry.** \$5 m Paper Industry Management Assn, 2570 Devon Av. Des Plaines, Ill. 60018
- Petroleum Management.** \$7 m (s-m JI) Petroleum Engineer Pub. Co. 800 Davis Bldg, Dallas 75202
- Physics and Chemistry.** See Journal of Research of the National Bureau of Standards
- Physics Today.** \$4 m American Institute of Physics, 335 E 45th St. New York 10017
- Pit and Quarry.** \$7 m Pit and Quarry Publications, Inc. 431 S Dearborn St. Chicago 60605
- Plant Engineering.** \$10 m Technical Pub. Co. 308 E James St. Barrington, Ill. 60010
- Plastics Technology.** \$7 m Plastics Technology Magazine, 630 Third Av. New York 10017
- Plastics World.** \$8 m Cahners Pub. Co. Inc. 221 Columbus Av. Boston, Mass. 02116
- Plating.** \$5 m American Electroplaters' Society, Inc. 443-445 Broad St. Newark, N.J. 07102
- Power.** \$3 m McGraw-Hill, Inc. 330 W 42d St. New York 10036
- Power Engineering.** \$10 m Technical Pub. Co. 308 E James St. Barrington, Ill. 60010
- Process Design and Development.** See Industrial and Engineering Chemistry
- Product Engineering.** \$15 bi-w McGraw-Hill Inc. 330 W 42d St. New York 10036
- Product Research and Development.** See Industrial and Engineering Chemistry
- Progressive Architecture.** \$10 m Reinhold Pub. Corp. 430 Park Av. New York 10022
- Public Roads.** \$1 bi-m Superintendent of Documents, Washington, D.C. 20402
- Public Works.** \$7 m Public Works Journal Corp. 200 S Broad St. Ridgewood, N.J. 07450
- QST.** \$6 m American Radio Relay League, Inc. 225 Main St. Newington, Conn. 06111
- RCA Review.** \$2 q Radio Corporation of America, RCA Laboratories Division, Princeton N.J. 08540
- Radio and Electronic Engineer.** £5 10s m Institution of Electronic and Radio Engineers, 8-9 Bedford Square, London, W.C. 1
- Radio Corporation of America Review.** See RCA Review
- Radio-Electronics.** \$5 m Gernsback Publications, Inc. 154 W 14th St. New York 10011
- Radio Propagation.** See Journal of Research of the National Bureau of Standards
- Radio Science.** See Journal of Research of the National Bureau of Standards
- Research/Development.** m F. D. Thompson Publications, Inc. 205 W Wacker Drive, Chicago 60606
- Review of Scientific Instruments.** \$13 m American Institute of Physics, 335 E 45th St. New York 10017
- \$11 to members of scientific societies
- Roads and Streets.** \$6 m The Gillette Group, Magazine Pub. Div. The Reuben H. Donnelley Corp. 466 Lexington Av. New York 10017
- Rock Products.** \$10 m Maclean-Hunter Pub. Corp. 79 W Monroe St. Chicago 60603
- Name changed to Rock Products Mining and Processing January, 1964; became Rock Products again in July 1964
- Royal Aeronautical Society Journal.** £10 10s m Royal Aeronautical Society. 4 Hamilton Place, London, W. 1
- Rubber Age.** \$5 m Palmerton Pub. Co. Inc. 101 W 31st St. New York 10001
- Rubber Chemistry and Technology.** \$9.50 5 times a yr American Chemical Society, Division of Rubber Chemistry, Prince and Lemon Sts, Lancaster, Pa. 17604
- Rubber World.** \$7 m Bill Brothers Pub. Corp. 630 3d Av. New York 10017
- SAE Journal.** \$12 m Society of Automotive Engineers, Inc. 485 Lexington Av. New York 10017
- SMPTE Journal.** \$16 m Society of Motion Picture and Television Engineers, 9 E 41st St. New York 10017
- Safety Maintenance.** \$4 m Alfred M. Best Co. Inc. 75 Fulton St. New York 10038
- Scientific American.** \$7 m Scientific American, Inc. 415 Madison Av. New York 10017
- Soap and Chemical Specialties.** \$4 m MacNair-Dorland Co. Inc. 254 W 31st St. New York 10001
- Soap Blue Book is extra number
- Society of Automotive Engineers Journal.** See SAE Journal
- Society of Dyers and Colourists Journal.** £8 8s m Society of Dyers and Colourists, Dean-House 19 Piccadilly, Bradford 1, Yorkshire, England
- Society of Motion Picture and Television Engineers Journal.** See SMPTE Journal
- Ap Sci Ann/64**

- Sound; Its Uses and Control.** \$8 bi-m Sound, 335 E 45th St. New York 10017
Discontinued with the November-December 1963 number
- Space/Aeronautics.** \$15 m Conover-Mast Publications, Inc. 205 E 42d St. New York 10017
Extra number. Research and Development Technical Handbook September
- Steel.** \$25 w Penton Pub. Co, Penton Bldg. Cleveland 44113
- Tappl.** m Technical Association of the Pulp and Paper Industry, 360 Lexington Av. New York 10017
Extra number Yearbook 1964-1965
- Technical Association of the Pulp and Paper Industry.** See Tappl
- Textile Industries.** \$2 m W. R. C. Smith Pub. Co. 1760 Peachtree Rd. N.W. Atlanta 30309
Extra number published in Mid-September
- Textile Research Journal.** \$25 m Textile Research Institute, Inc. Publications Department, P.O. Box 625, Princeton, N.J. 08540
- Textile World.** \$2 m McGraw-Hill, Inc. 330 W 42d St. New York 10036
- Tool and Manufacturing Engineer.** \$6 m American Society of Tool and Manufacturing Engineers, 20501 Ford Road, Dearborn, Mich. 48128
- Traffic Quarterly.** q Eno Foundation for Highway Traffic Control, Inc. Saugatuck, Conn. 06880
Price on request
- Water & Sewage Works.** \$5 m Scranton Pub. Co, Inc. 35 E Wacker Drive, Chicago 60601
Two numbers published in November
- Water Pollution Control Federation Journal.** \$10 m Water Pollution Control Federation, 3900 Wisconsin Av. Washington, D.C. 20016
- Water Works and Wastes Engineering.** \$5 m Water Works and Wastes Engineering, 466 Lexington Av. New York 10017
Formerly Water Works Engineering; changed January 1964
- Water Works Engineering.** \$5 m Water Works Engineering, 466 Lexington Av. New York 10017
Name changed to Water Works and Wastes Engineering January, 1964
- Welding Engineer.** \$3 m Welding Engineer Publications, Inc. 5826 Dempster St. Morton Grove, Ill. 60053
Extra number published in Mid-June
- Welding Journal.** \$8 m American Welding Society. 345 E 47th St. New York 10017
- Westinghouse Engineer.** \$2.50 bi-m Westinghouse Engineer. P.O. Box 2278, 3 Gateway Center. Pittsburgh 15230
- Wire and Wire Products.** \$8 m Quinn-Brown Pub. Corp. 299 Main St. Stamford, Conn. 06901
- Wireless World.** £2 6s; U.S. \$8; Canada \$8 m Iliffe Electrical Publications, Ltd. Dorset House, Stamford St. London, S.E. 1

Key to General Abbreviations

| | | | |
|---------|--|------|--|
| + | continued on later pages of the issue | Jl | July |
| abr | abridged | Mr | March |
| Ag | August | My | May |
| Ap | April | N | November |
| bibliog | bibliography | ns | new series |
| comp | compiled or compiler | no | number |
| cond | condensed | O | October |
| cont | continued | p | page |
| D | December | pl | plate |
| diag | diagram | por | portrait |
| ed | edited or edition or editor | pt | part |
| F | February | rev | revised |
| il | illustrations | S | September |
| inc | incorporated | sup | supplement |
| Ja | January | tr | translated or translation or translator |
| Je | June | v | volume |
| | | yrbk | yearbook |

Sample entry: GAS meters
Trends in metering and regulation. H. J.
Evans. 11 diags Gas 40:78+ Ja '64

Explanation: An illustrated article with diagrams, on the
subject GAS meters entitled "Trends in
metering and regulation," by H. J. Evans,
will be found in volume 40 of Gas, page 78
(continued on later pages of the same
issue) the January 1964 number

Applied Science & Technology Index

1964

ABS (alkyl benzenesulfonate). See Benzene-sulfonates

ACTH

New synthesis of a biologically active nonadecapeptide corresponding to the first nineteen amino acid residues of adrenocorticotropins. C. H. Li and others. bibliog *il Am Chem Soc J* 86:2715-18 JI 5 '64
Synthesis of a biologically active heptadecapeptide related to adrenocorticotropin. C. H. Li and others. bibliog *il Am Chem Soc J* 86:2703-10 JI 5 '64
Synthesis of a biologically active pentadecapeptide corresponding to an altered sequence in the adrenocorticotropin (ACTH) structure. C. H. Li and others. bibliog *il Am Chem Soc J* 86:2711-15 JI 5 '64

ABBREVIATIONS

See also

Symbols

ABERRATION (optics)

Calculation of the spherical aberration coefficient from beam emittance diagrams. A. Galejs and P. H. Rose. *R Sci Instr* 35:644-5 May '64
Determination of optical path difference for a photographic objective. F. E. Washer and W. R. Darling. *il J Res Nat Bur Stand* 67C:311-18 O '63
Discovery of stellar aberration. A. B. Stewart. *diags Sci Am* 210:100-8 Mr '64
Lens faults: illustrations with text. E. Meyers and B. Sherman. *Mod Phot* 28:80-1 Mr '64
Two optical aberration problems. E. J. Irons. *diags Am J Phys* 31:940-2 D '63

ABIETIC acid

Syntheses of (+)-methyl dehydrodisopropyl-abietae. T. A. Spencer and others. bibliog *Chem & Ind* p577-8 Ap 4 '64
Synthesis of abietadienoic acids from dehydroabietic acid. A. W. Burgstahler and L. R. Worden. bibliog *Am Chem Soc J* 86:96-101 Ja 5 '64

ABILITY

See also

Creative ability

ABLATION shielding. See Shielding (heat)

ABORTION

Provoked abortion, a major public health problem. E. Rice-Wray. bibliog *Am J Pub Health* 54:313-21 F '64

ABRASION

Correlation of laboratory abrasion testers. L. I. Weiner and C. J. Pope. *diags Textile Res J* 33:761-4; 34:371-2 S '63, Ap '64
Effect of abrasion on the specific surface area of metals and glass. R. J. Adams and others. bibliog *il Electrochem Soc J* 111: 774-80 JI '64
Mechanism of abrasion of vulcanized rubber. A. P. Rudakov and E. V. Kuvshinski. bibliog *diags Rubber Chem & Tech* 37:291-6 Ja '64
Some aspects of abrasion properties of cotton fabrics. W. Zurek and H. Szemik. *diags Textile Res J* 34:143-52 F '64

ABRASIVE belts

Abrasive belt grinding: a consideration for low unit cost productivity. B. Feinberg. *il Tool & Manuf Eng* 52:109-14 Mr '64
Belts grind out shiny finish. *il Iron Age* 194:101 JI 23 '64

ABRASIVE wheels. See Grinding wheels

ABRASIVES

Abrasive machining goes big. R. H. Eshelman. *il Iron Age* 193:55 F 27 '64
Abrasive machining: the big bite of tiny grains. R. H. Eshelman. *il Iron Age* 193: 93-100, cover Ap 9 '64

Abrasives; before and after the weld. *il Welding Eng* 49:35-8 N '64 (reprints 50c)
Carborundum grinds out new abrasive methods. R. H. Eshelman. *il Iron Age* 194:47 O 15 '64

Deflashing tool; abrasive blast quickly cleans molded parts. *il Plastics World* 21:105 N '63
Faster cutoff of tool steels with dry abrasive wheels. C. H. Wick. *il Mach* 70:99-101 N '63
New cost cutting frontiers. *il diags Steel* 154: 80-9 Ap 13 '64

Relation between the thickness of the affected glass and the diameter of abrasive grains in the grinding of glass. P. Y. Bokin. *Glass Ind* 45:139 Mr '64

Remove metal at lower cost by abrasive machining. G. Nisula. *il diags Product Eng* 35:106-9 My 25 '64

Statistical polyhedron model of abrasive grain. H. T. McAdams. bibliog *diags A S M E Trans ser B* 85:388-93; Discussion. 393-4 N '63

Straight talk about abrasive machining. P. J. Gruber. *Automotive Ind* 131:132+- S 1 '64

Take heavier cut, abrasive users told; abstract. R. Merritt. *il Iron Age* 193:70 Mr 26 '64

Two-way spin speeds deburring. J. E. Sandford. *il diags Iron Age* 194:55-7 JI 9 '64

Which abrasive is best for you? E. A. Borch. *il Foundry* 91:139-40+- S '63; Discussion. L. C. Frank. 92:111-12+- F '64

See also

Abrasive belts

Metal finishing

Polishing

ABSENTEEISM (labor)

Reduction of industrial time-loss; treatment with carisoprodol compound in musculoskeletal disorders. R. G. Conant. bibliog *Ind Med* 33:25-7 Ja '64

Sick absence for men and women by marital status. P. E. Enterline. bibliog *Archives Environmental Health* 8:466-70 Mr '64

Sick absence in certain western countries. P. E. Enterline. bibliog *Ind Med* 33:738-41 O '64

ABSORBENTS

Conductometric determination of carbon using carbonate-saturated barium hydroxide absorbent. E. J. Violante. bibliog *Anal Chem* 36:856-8 Ap '64

Dry-liquids concept; Micro-Cel E. *il Chem Eng Prog* 60:119 Ag '64

How to use oil absorbents. *il Safety Maint* 128:52-4 Ag '64

Straggling of electrons in layered media. N. G. Parke, 3d and others. *J Ap Phys* 35: 3065-6 O '64

ABSORPTION

Absorption of chlorine by wool. I. C. Watt and R. Morris. bibliog *Textile Res J* 34:701-5 Ag '64

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Absorption of oxygen by sodium sulphite on a sieve plate. I. J. Harris and G. H. Roper. bibliog *diags Can J Chem Eng* 42:34-7 F '64

Attaining equilibrium in water absorption tests of epoxy casting resins. H. Lee. bibliog *Materials Res & Stand* 3:910-13 N '63

Automatic apparatus for measuring the absorption or evolution of gas at constant pressure. F. Neighbour and D. Verdin. bibliog *diags J Sci Instr* 41:219-21 Ap '64

Carbonyl-stretching absorptions in the pentacarbonyl hydrides of manganese, technetium, and rhenium. D. K. Huggins and H. D. Kaesz. bibliog *Am Chem Soc J* 86: 2734-6 JI 5 '64

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- Gas absorption accompanied by a large heat effect and volume change of the liquid phase, S. H. Chiang and H. L. Toor, bibliog diag A I Ch E J 10:398-402 My '64
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- Hydrogen absorption by and dissolution rate of low-carbon steel in sulfuric, hydrochloric, phosphoric and nitric acids, R. M. Hudson, bibliog Corrosion 20:245-51 Ag '64
- Immersion cell for the quantitative determination of liquid absorption, swelling, and density of porous solids, I. G. Fels, diags R Sci Instr 35:1357-9 O '64
- Kinetics of absorption of carbon dioxide in monoethanolamine solutions at short contact times, J. K. A. Clarke, bibliog diags Ind & Eng Chem Fundamentals 3:239-45 Ag '64
- Mechanism of liquid-phase resistance to gas absorption in a packed column, J. E. Vivian and C. J. King, bibliog flow diag A I Ch E J 10:221-7 Mr '64
- Non-ionic surfactants and water absorption, R. W. Mendes and others, bibliog Drug & Cosmetic Ind 95:34-6+ JI '64
- Oxygen absorption in low-frequency vertically vibrating liquid columns, R. H. Buchanan and others, bibliog diag Ind & Eng Chem Proc Design 2:173-7 JI '63; Discussion, 3:191-2 Ap '64
- Paramagnetic resonance absorption of v-irradiated synthetic zeolites, D. N. Stamires and J. Turkevich, bibliog Am Chem Soc J 86:757-61 Mr 5 '64
- Removal of sulfur oxides from flue gas with alkali-alumina at elevated temperatures, D. Binstock and others, bibliog flow sheet il diags A S M E Trans ser A 86:353-8; Discussion, 353-60 JI '64
- Salicylic acid absorption; abstract, F. Gstoner and R. Elsner, Drug & Cosmetic Ind 95:123 JI '64
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- Vapor-phase dyeing of cellulose acetate; equilibrium saturation values and absorption isotherms, F. Jones and R. Seddon, bibliog il diag Textile Res J 34:373-80 My '64
- See also
Silica gel
Sound—Absorption
- ABSORPTION (physiology)**
Absorption of preformed vitamin A from ligatured poultry intestinal sections, T. E. Shellenberger and others, bibliog J Nutrition 82:99-105 Ja '64
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- SO₂ absorption in the respiratory tract, L. C. Strandberg, bibliog diags Archives Environmental Health 9:160-6 Ag '64
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- ABSORPTION apparatus**
Absorption or compression for air-conditioning systems; which? F. C. Wood, il Power 107:59-62 D '63
- Foaming in a natural gasoline absorber, W. E. Glausser, diags Chem Eng Prog 60:67-8 O '64
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- ABSORPTION of rays**
Absorption data of laser-type GaAs at 300° and 77°K, W. J. Turner and W. E. Reese, bibliog diag J Ap Phys 35:360-2 F '64
- Errors of reflectivity measurements and of calculations of refractive index n and absorption coefficient k, H. Pillner and K. v. Gehlen, bibliog Am Mineralogist 49:867-82 JI '64
- Modulation of infrared by free carrier absorption, R. B. McQuistan and J. W. Schultz, bibliog diags J Ap Phys 35:1243-8 Ap '64
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- Scattering and absorption of plane waves by cylindrically symmetrical underdense zones, F. A. Albini, bibliog diag AIAA J 2:524-30 Mr '64
- Ultraviolet absorbers and their use in plastics, J. A. Weicksel, il Tappi 46:sup 196A-8A N '63
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- See also
Beer law
Black body
Spectrophotometry
- ABSORPTION spectra.** See Spectrum—Absorption spectra
- ABSTRACTS**
Gaps in abstracting? G. Borgstrom and C. Paris, bibliog Food Tech 18:64-6 Ja '64
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Chemical abstracts (periodical)
- ACCELERATION**
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- Effect of variation of acceleration on free-surface instability, C. S. Yih and S. P. Lin, bibliog il diags Tappi 47:88-94 F '64
- Electromagnetic acceleration correction to the Debye relaxation time, R. W. Schmieder, Am J Phys 31:885-6 N '63
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Picolinic acid
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Oleic acid
Stearic acid
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Benzoic acid
Carboxylic acids
Cinnamic acid
Croconic acid
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Maleic acid
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Adsorbents
Chromatographic analysis
Desorption

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See also

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See also

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Moving pictures in advertising
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Air purification
Dehumidification
Electricity in air conditioning
Exhaust systems
Gas in air conditioning
Ventilation

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Airport buildings
Animal buildings
Apartment houses
Atomic research laboratories
Auditoriums
Bank buildings
Churches
College buildings
Cotton mills
Data processing service centers
Exhibition buildings
Factories
Hospitals
Laboratories
Library buildings
Office buildings
Office buildings, Industrial
Paper and pulp mills
Pharmaceutical laboratories
Printing offices
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Store buildings
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Telephone company buildings
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Invar
Iron alloys
Lithium alloys
Magnesium alloys
Molybdenum alloys
Nickel alloys
Niobium alloys
Niobium stannide
Palladium alloys
Permalloy
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Rhenium alloys
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Low temperature ceramic solves high temperature problems. A. C. Allen. *il Cer Ind* 83:52-4+ Ag '64

ALUMINUM pipes. See Pipes, Aluminum**ALUMINUM plates**

Aluminum sheet edge preparation by routing. *il Engineering* 197:25 Ja 3 '64

Automatically square-cut aluminum plate. *il Engineer* 216:959 D 6 '63

Giant hydraulic press tests missile skin. *il Hydraulics & Pneumatics* 17:42 J1 '64

Milling waffle pattern in Saturn tank skins. H. D. Adams. *il Mach* 70:116-18 Mr '64

To stress-relieve alloy plates; stretch. *il Engineering* 197:873 Je 26 '64

ALUMINUM roofs. See Roofs, Aluminum**ALUMINUM ships.** See Ships, Aluminum**ALUMINUM silicates**

Acidic crystalline aluminosilicates. C. J. Plank and others. *bibliog Ind & Eng Chem Product Res & Develop* 3:165-9 S '64

ALUMINUM silicates—Continued

- Cracking catalysts are metal-acid aluminosilicates; Durabead 5; abstract, C. J. Plank. *il Chem & Eng N* 42:70 Ap 20 '64
- Dissolution in ceramic systems; molecular diffusion, natural convection, and forced convection studies of sapphire dissolution in calcium aluminum silicate. A. R. Cooper, Jr. and W. D. Kingery. bibliog diags *Am Cer Soc J* 47:37-43 Ja '64
- New polymorph of Al_2SiO_5 and further studies in the system $Al_2O_3-SiO_2-H_2O$. S. Aramaki and R. Roy. bibliog diags *Am Mineralogist* 48:1322-47 N '63
- Phase relations between cymrite, $BaAl_2Si_2O_8$ (OH), and celsian, $BaAl_2Si_2O_8$. Y. Seki and G. C. Kennedy. diags *Am Mineralogist* 49:1407-26 bibliog(p 1425-6) S '64
- System Al_2SiO_5 at high temperatures and pressures. R. C. Dehries. bibliog *il diags Am Cer Soc J* 47:230-7 My '64
- X-ray study of sursassite from New Brunswick. R. L. Freed. bibliog *Am Mineralogist* 49:168+ Ja '64

See also

Albite
Anorthite
Bentonite
Kyanite
Pyrophyllite
Sillimanite
Tourmaline

ALUMINUM tanks. See Tanks, Aluminum

ALUMINUM towers. See Towers, Aluminum

ALUMINUM walls. See Walls, Aluminum

ALUMINUM window frames. See Window frames, Aluminum

ALUMINUM work

- Aluminum impact extrusions. A. Katz. *il diags Machine Design* 36:150-4 Ag 27 '64
- Aluminum metalworking advances developed in aluminum sub project. *il Mod Metals* 20:60+ Ap '64
- Aluminum sandwiches for instant airfields. *il Steel* 153:73-80 D 16 '63
- Aluminum waffles milled from the solid by advanced numerical control. L. W. Collins, Jr. *il diags Mach* 70:103-6 Jl '64
- Aluminum's boiling pot of ideas. G. L. Kobrin. *il Iron Age* 193:93-100 Je 18 '64
- Anvil attachment speeds stapling of aluminum. *il diags Light Metal Age* 22:23 Ag '64
- Auto-assembly of valve guides and seats in aluminum cylinder heads. D. Scott. *il Automotive Ind* 129:44-7 N 1 '63
- Automatic machine produces airplane access doors. L. K. Geertsen. *il Mach* 70:147-9 My '64
- Chemical cleaner aids epoxy-aluminum bond. *il Materials in Design Eng* 60:165-6 N '64
- Cold flow replaces soldering. *il diags Am Mach* 108:74-5 Mr 2 '64
- Continuous aluminum rod. D. B. Cofer. *il diags Wire & Wire Prod* 38:1858-61+ D '63
- Continuous casting. *il diags Mod Metals* 20:40-2+ Mr; 54+ Ap; 56+ My; 44+ Je '64 (to be cont)
- Cryothermal treatment stabilizes aluminum forgings. A. Incardona and H. Poett. *il Tool & Manuf Eng* 53:66-7 S '64
- Dip brazing aluminum. R. H. Haines. *il Mod Metals* 20:28+ Mr '64
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- Dip coating 16-ft. long aluminum extrusions; question and answers. *Ind Finishing* 40:102 S; 84+ O '64
- Electroforming of aluminum optical components. *il Light Metal Age* 22:4-5 Ag '64
- Expanded aluminum. A. Rosenthal. *il Mod Metals* 20:28+ Ag '64
- Extruders predict 21 per cent increase in 1964. *Mod Metals* 20:33-4+ Jl '64
- Extrusion handling system cuts costs and waste. *il Mod Metals* 20:62+ F '64
- Extrusion of aluminum rod at the Prescott works of B.I.C.C. Ltd. W. J. Bannister. *il Wire & Wire Prod* 38:1706-9+ N '63
- Extrusion press built in record time; Fiedling and Platt installation at Indalex. *il plan Metallurgia* 69:10-12 Ja '64
- Extrusion users report. *Mod Metals* 20:38+ Jl '64
- Extrusion work order cost analysis. *Light Metal Age* 21:10-11 D '63
- Extrusions + synthetic rubber make versatile tools for press brakes. *il diags Mod Metals* 20:84-5 Jl '64
- Fast cycling extrusion press for aluminum. *il Engineering* 197:202 Ja 31 '64
- Ford guards productivity with huge castings impregnator. *il plan Automotive Ind* 129:71-4 N 15 '63

- Forming of tubular aircraft parts simplified by electrohydraulic shot. K. F. Smith. *il diags Mach* 71:114-17 S '64
- Furnace feeds hot billet shear. *il Iron Age* 194:155 S 24 '64
- Gun reaming precision aluminum die castings. H. Gregg. *il Mach* 70:126-7 N '63
- Haystack can find needle in sky. *il Mod Metals* 20:66+ S '64
- Heat exchangers contoured to fit available space. G. J. Haismaier. *Steel* 153:23 D 30 '63
- Hot punch shapes new laminate. *il Iron Age* 193:64 Ap 2 '64
- How to form and fabricate prepainted aluminum. H. E. Wegner. *il diags Materials in Design Eng* 59:92-6 Ja '64
- How to specify and fabricate prepainted aluminum sheet. H. E. Wegner. *il Mod Metals* 20:36+ Je '64
- Integrated extrusion plant offers one-stop service. *il Mod Metals* 20:68-9 Mr '64
- Liquid nitrogen quenches without distortion. E. Dullberg and C. Vanderhoof. *il Tool & Manuf Eng* 52:71-3 My '64
- Manufacture of 3/4" diameter EC redraw rod by the slit strip process. C. W. Siltanen. *il diags Wire & Wire Prod* 38:1712-13+ N '63
- New aluminum extrusion alloy for porcelain enameling. F. L. Church. *il Mod Metals* 20:38+ My '64
- New lubricants solve aluminum fabrication problems; Cindol. *il Mod Metals* 20:32+ S '64
- One-piece aluminum passenger car wheel. *il Product Eng* 35:67-8 F 17 '64
- Patterned extrusions. *il diags Light Metal Age* 21:17-18 D '63
- Piston poses production puzzle. R. H. Eshelman. *il Iron Age* 192:73 D 12 '63
- Radiation pyrometer for temperature measurement in the hot extrusion of aluminum. G. A. Woolvet and J. M. Alexander. diags *Inst Metals J* 92:430-2 '63-64
- Rotary milling slashes cost of producing Polarix rings. *il diags Mach* 70:133-4 Je '64
- Rubber top spaces anodized finish. *il Mod Metals* 20:38 Mr '64
- Shear cuts hot logs into billets at the extrusion press. *il Mod Metals* 20:54-5 Ag '64
- Skillful metalworking team launches research sub. E. E. Ellwood. *il Iron Age* 194:58-9 Jl 9 '64
- Snyder special machine for spot-facing and weigh-milling aluminum pistons. *il Mach* 70:176 F '64
- Soldering aluminum without flux. *il Iron Age* 194:135 O 29 '64
- Thin-wall aluminum sleeves ground without distortion. H. J. Gerber. *il Mach* 70:143 My '64
- Wound tubing; novel approach to aluminum fabrication. R. R. Irving. *il Iron Age* 193:73-5 My 7 '64

See also

Aluminum—Finishing
Aluminum—Welding
Aluminum founding

ALUMINUM works

- Aluminum extrusion plant. *il Engineer* 216:1030 D 20 '63
- Effective scrubber to remove chlorine from aluminum-factory gaseous effluents. W. E. Race and R. Lewis. *il diags Inst Metals J* 92:205-7 '63-64
- Shell shelters aluminum smelter. *il Eng N* 172:23 Ja 2 '64

Control equipment

- Automation of pre-paint treatment in coil coating lines. *diags Mod Metals* 20:76 Je '64

Equipment

- Automatic handling line pours stacks, bundles ingot. *il Mod Metals* 19:76 Ja '64
- Characteristics of coloured weather resistant coatings for aluminium. F. G. Abbott. *il Metallurgia* 69:167-72 Ap '64
- Extrusion handling equipment. J. W. Nelson. *il diags Mod Metals* 20:32+ Ap; 62+ My; 50+ Je '64 (to be cont)
- New line gives coiled strip mechanical, organic finishes. F. D. Shiras. *il Mod Metals* 20:58+ Je '64
- Special-purpose heavy-duty trailer. *il Engineering* 217:79 Ja 10 '64
- Special trailer for furnace box and hot anode transportation at Fort William. *il Metallurgia* 69:114 Mr '64

Quality control

- New quality control test for anodized aluminum. E. T. Englehart and G. Sowinski, Jr. *il diags Mod Metals* 20:56+ Ag '64

AMALGAMS

Cold combustion for the quantitative determination of amalgamable metals in the presence of their oxides in treated ores. M. G. Habashy, *diag Anal Chem* 36:1781-3 Ag '64
 Forced convection boiling of potassium-mercury systems. Y. S. Tang and others, *bibliog II diag A I Ch E J* 10:617-20 S '64

Fracture of aluminum alloys wetted with zinc amalgam. *Light Metal Age* 22:3 Je '64

AMARYLLIDACEAE

Biological interconversions in the amaryllidaceae; the haemanthamine-haemanthidine-tazettine sequence. H. M. Faies and W. C. Wildman, *bibliog Am Chem Soc J* 86:294-5 Ja 20 '64
 Narcissamine; a quasi-racemic alkaloid. S. M. Laiho and H. M. Faies, *bibliog Am Chem Soc J* 86:4434-8 O 20 '64

AMATEUR moving pictures. See Moving pictures, Amateur

AMATEUR radio operators. See Radio operators, Amateur

AMBLYGONITE. See Phosphates

AMERICAN association for contamination control

Annual technical meeting, 3d, Los Angeles, May 5-8. Heating-Piping 36:121 JI '64

AMERICAN association for textile technology
 Annual conference, 4th, New York, Feb. 6. *Am Dyestuff Rep* 53:188-9 Mr 2 '64

AMERICAN association of petroleum geologists
 AAPG studying certification. *Oil & Gas J* 62:79 My 11 '64

Annual meeting, 49th, Toronto, May 18-21; program and abstracts of papers. *Am Assn Pet Geologists Bul* 48:511-52, 1415-37 Ap '64

Membership directory. *Am Assn Pet Geologists Bul* 48:1-222 pt 2 Mr '64

Professional certification for the A.A.P.G. J. C. Sproule. *Am Assn Pet Geologists Bul* 48:382-91 Mr '64

Southwestern federation of geological societies meeting, Midland, Texas, Jan. 29-Feb. 1; abstracts of papers. *Oil & Gas J* 62:132-5 Ja 13 '64

AMERICAN association of physics teachers
 Annual meeting, 32d, New York, Jan. 23-26, 1963; abstracts of papers. *Am J Phys* 32:76-84 Ja '64

Annual meeting, 33d, New York, Jan. 22-25; with abstracts of papers. *Am J Phys* 32:811-18 O '64

Meeting, Orono, Me. June 27-29; abstracts of papers. *Am J Phys* 32:176-80 F '64

Summer meeting, Northfield, Minn., June 26-28, 1962; abstracts of papers. *Am J Phys* 32:71-5 Ja '64

AMERICAN association of railway surgeons
 Annual meeting, 76th, Chicago, April 9-11; program. *Ind Med* 33:186-7 Ap '64

AMERICAN association of state highway officials
 AASHO road test; three years later. *Eng N* 172:19-21 Ap 9 '64

New AASHO guide specs near final vote. *Roads & Sts* 106:49-51 D '63

AMERICAN association of textile chemists and colorists

Annual convention, New York, Sept. 23-25; program and list of exhibitors. *Mod Textiles Mag* 45:60+ S '64

Annual meeting, Boston, Oct. 30-Nov. 1; abstracts of papers. *Textile Ind* 127:112-18 D '63

Annual meeting, 7th, Boston, Oct. 30-Nov. 1. *Textile World* 113:108+ D '63; *Am Dyestuff Rep* 53:22-31 Ja 6 '64

Council highlights. *Am Dyestuff Rep* 53:304-5 Ap 13 '64

Council highlights. 236th meeting, Research Triangle Park, N.C. *Am Dyestuff Rep* 53:644-5 JI 20 '64

Dedication exercises AATCC national headquarters building, Research Triangle Park, N.C. April 24. *Am Dyestuff Rep* 53:595-608 JI 6 '64

Meeting, New York; abstracts of papers. *Textile World* 114:106-8+ N '64

National convention, New York, Sept. 23-25; with program, abstracts of papers and list of exhibitors. *Am Dyestuff Rep* 53:732-86 Ag 31 '64

New England sections regional meeting, South Egremont, Mass. May 1-2; with abstracts of papers. *Am Dyestuff Rep* 53:685-8 Ag 3 '64

President's address. E. R. Kaswell. *Am Dyestuff Rep* 52:1057-8 D 23 '63

Report of a questionnaire study of the membership conducted by the executive committee of the council. *Am Dyestuff Rep* 53:645-52 JI 20 '64

Role of AATCC in the total textile industry. F. Fortess, *diag Am Dyestuff Rep* 53:609-12 JI 6 '64

Committee on research

Minutes of 212th meeting. *Am Dyestuff Rep* 52:1073-9 D 23 '63

Minutes of 213th meeting. *Am Dyestuff Rep* 53:262-7 Mr 30 '64

Minutes of 214th meeting. *Am Dyestuff Rep* 53:613-16 JI 6 '64

AMERICAN ceramic society

Annual meeting, 66th, Chicago, April 18-23; with program. *Am Cer Soc Bul* 43:231-7+ 414-21 Ap-May '64

Membership roster. *Am Cer Soc Bul* 43:691-725+ O '64

Basic science division

Annual meeting, Chicago, April 20-22; program and abstracts of papers. *Am Cer Soc Bul* 43:253+ Ap '64

Pacific coast regional meeting, 17th, and basic science division joint meeting, San Francisco, Oct. 28-30; program and abstracts of papers. *Am Cer Soc Bul* 43:653-5+ S '64

Ceramic-metal systems division

Annual meeting, Chicago, April 20-22; program and abstracts of papers. *Am Cer Soc Bul* 43:271+ Ap '64

Fall meeting, French Lick, Ind., Sept. 20-23; program and abstracts of papers. *Am Cer Soc Bul* 43:591-3+ Ag '64

Design division

Annual meeting, Chicago, April 20-22; program. *Am Cer Soc Bul* 43:267+ Ap '64

Electronics division

Annual meeting, Chicago, April 20-22; program and abstracts of papers. *Am Cer Soc Bul* 43:277+ Ap '64

Fall meeting, Gatlinburg, Tenn. *Am Cer Soc Bul* 42:764-6 D '63

Fall meeting, Philadelphia, Sept. 16-18; program and abstracts of papers. *Am Cer Soc Bul* 43:584-9 Ag '64

Glass division

Annual meeting, Chicago, April 20-22; program and abstracts of papers. *Am Cer Soc Bul* 43:287+ Ap '64

Fall meeting, Bedford, Pa.; abstracts of papers. *Glass Ind* 44:672-5+ D '63

Fall meeting, Bedford Springs, Pa., Oct. 14-16; program and abstracts of papers. *Am Cer Soc Bul* 43:645-7+ S '64

Materials and equipment division

Annual meeting, Chicago, April 20-22; program and abstracts of papers. *Am Cer Soc Bul* 43:297+ Ap '64

Fall meeting, Bedford Springs, Pa., Sept. 30-Oct. 3; program and abstracts of papers. *Am Cer Soc Bul* 43:637-9 S '64

Refractories division

Annual meeting, Chicago, April 20-22; program and abstracts of papers. *Am Cer Soc Bul* 43:301+ Ap '64

Fall meeting, Virginia Beach, Va., Oct. 8-10; program and abstracts of papers. *Am Cer Soc Bul* 43:641-3 S '64

Structural clay products division

Annual meeting, Chicago, April 20-22; program and abstracts of papers. *Am Cer Soc Bul* 43:311+ Ap '64

Fall meeting, Dallas, Sept. 23-25; program and abstracts of papers. *Am Cer Soc Bul* 43:599-601 Ag '64

Whiteware division

Annual meeting, Chicago, April 20-22; program and abstracts of papers. *Am Cer Soc Bul* 43:317+ Ap '64

Fall meeting, Bedford Springs, Pa., Sept. 30-Oct. 3; program and abstracts of papers. *Am Cer Soc Bul* 43:637-9 S '64

AMERICAN chemical society

ACS business operations fully computerized. *Chem & Eng N* 42:74+ O 12 '64

ACS comments on lab licensing bill. *Chem & Eng N* 42:30 Mr 16 '64

ACS divisions elect officers for 1964. *Chem & Eng N* 41:58-62 D 23 '63

American chemical society; its officers, directors, councilors, and committees. *Chem & Eng N* 42:72-8 F 17 '64

ACS monographs advisory board named. *Chem & Eng N* 42:54 Ag 10 '64

ACS names 24 award winners. *Chem & Eng N* 42:178-9 S 7 '64

Annual report, 1963. *Chem & Eng N* 42:53-74 Mr 9 '64

AMERICAN chemical society—Continued

- Board of directors minutes and reports of committees, Sept. 8, Chem & Eng N 41:66-78 N 11 '63
- Board of directors minutes and reports of committees, Chem & Eng N 42:134-47 Ja 27 '64
- Committee on professional training; progress report, Chem & Eng N 42:68-73 Mr 16 '64
- Fibers, finishes, dyes top Southeastern regional meeting, Textile World 114:69 Ja '64
- Local sections honor students, teachers, Chem & Eng N 42:68+ Je 22 '64
- Meetings, 147th, Philadelphia; abstracts of papers, Plastic Tech 10:59 Ap '64
- National meeting, 146th, Denver, Jan. 19-24; program, Chem & Eng N 41:80-97 D 16 '63
- National meeting, 147th, Philadelphia, April 5-10; official reports, Chem & Eng N 42:66-91 Je 1 '64
- National meeting, 147th, Philadelphia, April 5-10; program, Chem & Eng N 42:76-84 Ja 13; 72-111 Mr 2 '64
- National meeting, 148th, Chicago, Aug. 30-Sept. 4; with program, Chem & Eng N 42:60+ Jl 27 '64
- National meeting, 148th, Chicago; presidential address, M. H. Arveson, Chem & Eng N 42:126-30 S 14 '64
- Officers of local sections and divisions and chapters of student affiliates, Chem & Eng N 42:67-75 Mr 23 '64
- Official reports from the 148th national meeting, Chem & Eng N 42:100-2+ O 26 '64
- Price is ACS president-elect for 1964, Chem & Eng N 41:74 D 16 '63
- Professional relations and status committee studies code of ethics, Chem & Eng N 42:102 Jl 13 '64
- Reports from the Board of directors meeting June 6, and reports of committees, Chem & Eng N 42:54-61 Ag 3 '64
- Society names advisory board members, Chem & Eng N 42:78-80 F 17 '64

Chemical abstracts service

- ACS financial policies and Chemical abstracts prices, Chem & Eng N 42:94+ Ap 20 '64
- CAS names first advisory board, Chem & Eng N 42:80+ My 11 '64
- Philadelphia section proposes changes in CA, Chem & Eng N 42:60+ F 24 '64

Division of rubber chemistry

- Fall meeting, 84th, New York, Sept. 11-13; program, Rubber Chem & Tech 37:sup xvii-xx Ja '64
- Meeting, 85th, Detroit, April 28-May 1, Rubber Age 95:460-7 Je '64
- Meeting, 86th, Chicago, Sept. 2-4; program and abstracts of papers, Rubber Age 95:567-75 Jl '64; Rubber World 150:81-90 Jl '64
- Spring meeting, 85th, Detroit, April 28-May 1; program and abstracts of papers, Rubber Age 94:919-26 Mr '64; Rubber World 149:81-8 Mr '64

AMERICAN commission on stratigraphic nomenclature

- Records of the stratigraphic commission for 1961-1962, Am Assn Pet Geologists Bul 47:1987-91 N '63

AMERICAN concrete institute

- ACI awards; six honored at 60th convention, Am Concrete Inst J 61:sup 18-19+ Ap '64
- Annual convention, 60th, Houston, March 2-5; program, Am Concrete Inst J 61:sup3+ Ja '64
- Annual meeting, 60th, Houston, Tex., March 2-5 and Monterrey, Mexico, March 7; with abstracts of papers and list of exhibitors, Am Concrete Inst J 61:sup3-5+ My '64
- Annual report for 1963, Am Concrete Inst J 61:sup 1-4 AD '64
- Fall meeting, 16th, Toronto, Nov. 11-14; with abstracts of papers, Am Concrete Inst J 61:sup 11-14+ Ja; sup24-7 F '64
- Fall meeting, 17th, Miami, Nov. 11-13; program, Am Concrete Inst J 61:sup3+ S '64
- Mather is president, Eng N 172:51-2 Mr 5 '64
- Publication policy and instructions, Am Concrete Inst J 61:sup4-7+ F '64
- Responsibility in concrete, R. H. Corbetta, Am Concrete Inst J 61:481-6 My '64

AMERICAN cyanamid company

- American Cyanamid agricultural research center at Princeton, Food Tech 17:1400 N '63

AMERICAN die casting institute

- Annual meeting, Chicago, Sept. 11-12; with abstracts of papers, Foundry 91:121+ N '63
- Annual meeting, Chicago, Sept. 23-24; abstracts of papers, Foundry 92:154-6+ N '64

AMERICAN electroplaters society

- Annual convention and exposition, St Louis, June 15-18; with programs, abstracts of papers and list of exhibitors, Metal Finishing 62:64-74 Je '64
- Annual convention, 51st and Industrial finishing exposition, 6th, St Louis, June 14-18; with program, abstracts of papers, list of exhibitors and floor plan, Plating 51:438-45, 451-6 My '64
- Annual report, Plating 51:585-93 Je '64
- Financial report for the fiscal year July 1, 1963-June 30, 1964, Plating 51:900-3 S '64
- Quarterly report of AES vice chairman for research, W. H. Safranek, Plating 51:46, 227, 696-7, 926-7 Ja, Mr, Jl, S '64

AMERICAN foundrymens society

- Castings congress and exposition, 68th, Atlantic City, April 27-May 1; with program, list of exhibitors and abstracts of papers, Foundry 92:126-39 Ap; 60-71, 169-96 Je; 129-31+ Jl; 107-9 Ag '64

AMERICAN gas association

- Accounting section organization meeting, Atlanta, Sept. 12-13, Am Gas Assn Mo 46:26-8+ F '64
- AGA now reorganized for better efficiency, G. T. Kinney, Oil & Gas J 62:54-7 Je 1 '64
- A.G.A. public relations contests bring double rewards, Am Gas Assn Mo 46:19-20+ Mr '64
- AGA task groups use administrative dynamics, J. F. Ebdon, ed. Gas 40:75-8 F '64
- Annual convention, Atlantic City and New York, Oct. 11-15; preview, Am Gas Assn Mo 46:2-4 Jl-Ag '64
- Annual convention, Los Angeles; with new officers and directors elected, Am Gas Assn Mo 45:2-7 N '63
- Annual electronics seminar, 11th, Chicago, Nov. 18-20, Am Gas Assn Mo 46:31+ Ja '64
- GIDES trading post, Am Gas Assn Mo 46:22-3 My '64
- General management annual conference, 10th, New Orleans, March 23-25, Am Gas Assn Mo 46:29+ F; 30-2 My '64
- Industrial and commercial gas sales conference, Columbus, Ohio, March 31-April 2, Am Gas Assn Mo 46:33 F '64
- Joint AGA-PCGA convention, Los Angeles, Oct. 13-16, Gas Age 130:22-6+ D '63
- P&R promotion, advertising and public information structure streamlined, W. H. Ligon, Am Gas Assn Mo 46:14-15 Je '64
- Why A.G.A. is reorganizing its r&d program, Am Gas Assn Mo 46:15-16+ My '64

AMERICAN gas association monthly (periodical)

- A.G.A. Monthly wins NSC public interest award, Am Gas Assn Mo 46:6 Je '64

AMERICAN gear manufacturers association

- Annual meeting, 43th, Hot Springs, Va. June 7-10, Mach 70:123 Jl '64
- Annual meeting, Hot Springs, Va.; with abstracts of papers and new design manuals, Product Eng 35:73-8 Jl 20 '64

AMERICAN institute of aeronautics and astronautics

- Aerospace sciences meeting, New York, Jan. 20-22, Astronautics & Aeronautics 2:78-80 Mr '64
- AIAA first-year review, Astronautics & Aeronautics 2:72-5 Mr '64
- Annual meeting, 1st, Washington, June 20-July 2, Astronautics & Aeronautics 2:62-9 Ag '64
- Annual meeting, 1st, Washington, June 29 July 2; with plans, program and list of exhibitors, Astronautics & Aeronautics 2:78-84 Je '64

AMERICAN institute of architects

- AIA general conditions, H. J. Rosen, Prog Arch 45:168 Ag '64
- A.I.A. names 59 for rank of Fellowship, Arch Rec 135:23 Je '64
- AIA's new president, Eng N 172:46-7 Je 25 '64
- Annual convention, St Louis, June 14-18, Arch Rec 136:10+ Ag '64

AMERICAN institute of chemical engineers

- Annual meeting, 56th, Houston, Dec. 1-5; with program, Chem Eng Prog 59:104+ O; 90+ N '63
- Annual meeting, 57th, Boston, Dec. 6-10; with program, Chem Eng Prog 60:100-2+ O '64
- National meeting, 52d, Memphis, Tenn, Feb. 2-5; with program, Chem Eng Prog 59:102-8 D '63; 60:86-7 Ja '64
- National meeting, 53d, Pittsburgh, May 17-20; with program, Chem Eng Prog 60:104-8+ Mr '64
- National meeting, 54th, Las Vegas, Sept. 20-23; with program, Chem Eng Prog 60:108-12 Jl '64

AMERICAN Institute of mining, metallurgical and petroleum engineers

- Annual meeting, 93d, New York, Feb. 16-20; with abstracts of papers. *Pit & Quarry* 56: 82-3+ *My* '64
- Annual western meeting, C.I.M. held jointly with the Pacific Northwest metals & minerals conference, Vancouver, Oct. 25-28; program. *Can Min & Met Bul* 57:903+ *S* '64
- Societies name 1965 AIME officers and directors. *Min Eng* 16:290+ *Jl* '64

Metallurgical society

- Annual meeting, 93d, New York, Feb. 16-20; program and abstracts of papers. *J Metals* 16:73-130 *Ja* '64
- Extractive metallurgy division in perspective. C. L. McCabe. *J Metals* 16:670+ *Ag* '64
- Fall meeting, Philadelphia, Oct. 18-22; program and abstracts of papers. *J Metals* 16: 749-88 *S* '64

Fellows of the Metallurgical society. *J Metals* 16:196-7 *F* '64

Institute of metals' revised bylaws. *J Metals* 16:445-8 *My* '64

1963 metallurgical salary survey. W. J. Geroulo. *J Metals* 16:731-4 *S* '64

Technical conference on applied aspects of refractory metals, Los Angeles, Dec. 9-10; abstracts of papers. *J Metals* 16:410-15 *My* '64

Society of mining engineers

International mineral processing congress, 7th, and SME fall meeting, New York, Sept. 20-25; program and abstracts of papers. *Min Eng* 16:81-3 *Je*; 128-128B *Jl*; 60-1 *Ag* '64

Meeting, New York, Feb. 16-20; program and abstracts of papers. *Min Eng* 15:56-62 *N* '63; 16:59-68 *Ja* '64

1964 membership directory. *Min Eng* 16:129-281 *Jl* '64

Coal division

Annual spring meeting, Marion, Ill. April 16-17; abstracts of papers. *Coal Age* 69:108-9 *Je* '64

Society of petroleum engineers

Annual AIME meeting, 93d, New York, Feb. 16-20; program. *J Pet Tech* 16:53-4 *Ja* '64

Annual California regional meeting, 33d, Santa Barbara, Oct. 24-25; program and abstracts of papers. *J Pet Tech* 15:1093-5 *O* '63

Annual California regional meeting, 34th, Los Angeles, Nov. 5-6; program and abstracts of papers. *J Pet Tech* 16:1132-3 *O* '64

Annual fall meeting, 39th, Houston, Oct. 11-14; with program and abstracts of papers. *J Pet Tech* 16:1013-18 *S* '64

AMERICAN Institute of nutrition
Annual meeting, 28th, Chicago, April 13-17; proceedings. *J Nutrition* 83:385-99 *Ag* '64

AMERICAN Institute of physics
Annual report, 1963. E. Hutchisson. flow chart *il Phys Today* 17:43-59 *My* '64

Change in directorship. *Phys Today* 17:54-5 *O* '64

AMERICAN Institute of plant engineers
Joint AIPE-ASME plant engineering conference, Los Angeles, April 6-8; program. *Mech Eng* 86:110-11 *F* '64

National officers installed. *Plant Eng* 18:138-9 *Ag* '64

AMERICAN Institute of steel construction
Twelve buildings get awards. *il Arch Rec* 136:14-15 *S* '64

AMERICAN iron and steel institute
Trade associations that serve the public works field. *il Pub Works* 94:108-9 *N* '63

AMERICAN machine tool distributors association
Spring meeting, 40th, Boca Raton; with abstracts of papers. *Automotive Ind* 130:95+ *Ap* 15 '64

AMERICAN mining congress
Annual meeting, Los Angeles, Sept. 16-18; abstracts of papers of interest to producers of nonmetals. *Pit & Quarry* 56:101-4+ *N* '63

Annual membership meeting, Washington, Jan. 13-14. *Min Cong J* 50:50-3 *F* '64

Coal convention and coal show, Cleveland, Ohio, May 11-14; with abstracts of papers. *Coal Age* 69:98-102+ *Je* '64; *Min Cong J* 50: 48-64 *Je* '64

Coal division conference, Pittsburgh, Nov. 15; abstracts of papers. *Min Cong J* 49:58-9+ *D* '63

Coal show, Cleveland, May 11-14; program and list of exhibitors. *Min Cong J* 50:60-6 *Mr*; 66-85 *Ap* '64; *Coal Age* 69:128-34+ *Ap* '64

Meeting, Los Angeles; abstracts of papers. *Eng & Min J* 164:116+ *O*; 98-102 *N* '63

Metal mining and industrial mineral convention. *Eng & Min J* 165:107-8 *O* '64

Metal mining and industrial minerals convention, Los Angeles, Sept. 15-18; with program and abstract of papers. *Min Cong J* 49:41-53 *Ag*; 61-75D *O* '63

Metal mining and industrial minerals convention, Portland, Sept. 13-16; with program. *Min Cong J* 50:47-59 *Ag* '64

AMERICAN oil chemists society

Annual fall meeting, 37th, Minneapolis, Sept. 30-Oct. 2; abstracts of papers. *Soap & Chem Spec* 39:43-6+ *N* '63

Annual meeting, 55th, New Orleans, April 19-22; program and abstracts of papers. *Am Oil Chem Soc J* 41:sup4+ *Mr* '64

Annual report of the Smalley committee, 46th. *Am Oil Chem Soc J* 41:452-3 *Je* '64

Bright future in steady growth; report of the president 1963-64. W. O. Lundberg. *Am Oil Chem Soc J* 41:sup6+ *Je* '64

Fall meeting exposition, Chicago, Oct. 11-14; floor plan and list of exhibitors. *Am Oil Chem Soc J* 41:sup 18-20 *S* '64

Fall meeting, 38th, Chicago, Oct. 11-14; program and abstracts of papers. *Am Oil Chem Soc J* 41:3+ *Ag* '64

Report, industrial oils and derivatives committee, 1964. *Am Oil Chem Soc J* 41:614-15 *S* '64

Report of the commercial fats and oils analysis committee, 1964. *Am Oil Chem Soc J* 41:454-6 *Je* '64

Report of the epoxidized oils subcommittee on oxirane oxygen, 1963. *Am Oil Chem Soc J* 41:86-7 *Ja* '64

Report of the instrumental techniques committee, 1962-1963. *Am Oil Chem Soc J* 41: 158-60 *F* '64

Report of the standards committee, 1964. *Am Oil Chem Soc J* 41:sup 18+ *Jl* '64

Report on activities of industrial oils and derivatives committee, 1963. *Am Oil Chem Soc J* 40:605-6 *N* '63

AMERICAN petrofina, inc.
What happens when two oil firms merge? J. Scott. *il Pet Management* 36:80-7 *Ja* '64

AMERICAN petroleum Institute
API handles basic research. D. Martin. *il Pet Management* 35:13-16 *N* '63

Annual meeting, Chicago, Nov. 11; program. *Oil & Gas J* 61:85-7 *N* '63

Annual meeting, 43d, Chicago, Nov. 11-13. *Oil & Gas J* 61:105-24 *N* '63

Marketers, API face antitrust probe. G. T. Kinney. *Oil & Gas J* 61:42-3 *N* 25 '63

AMERICAN pharmaceutical association
Annual meeting, 111th, New York, Aug 2-7. *Drug & Cosmetic Ind* 95:331-3+ *S* '64

AMERICAN physical society
APS Division of electron physics, the first 20 years. L. Marton. *Phys Today* 17:44-6+ *O* '64

AMERICAN potash and chemical corporation
Kirkpatrick award for chemical engineering achievement. flowsheet *il diags Chem Eng* 70:225-36 *N* 11 '63

AMERICAN power conference
Annual meeting, 26th, Chicago, April 14-16; abstracts of papers on ehv and atomic power. *Power Eng* 68:41+ *Jl* '64

Annual meeting, 26th, Chicago, April 14-16; abstracts of papers on pumped storage. *Power Eng* 68:33 *Jl* '64

Annual meeting, 26th, Chicago, April 14-16; panel discussion on prevention of boiler furnace explosions. *Power Eng* 68:63-4 *Je* '64

Annual meeting, 26th, Chicago, April 14-16; with program and abstracts of papers. *Combustion* 35:47-50 *Mr*; 35-42 *My*; 38-41 *Je* '64

Meeting, Chicago; with abstracts of papers. *Elec World* 161:54-5+ *Je* 1 '64

AMERICAN public health association
Annual meeting, 92d, New York, Oct. 5-9; with preliminary program and list of exhibitors. *Am J Pub Health* 54:1341-1439 *Ag* '64

Committees and association representatives 1963-1964. *Am J Pub Health* 54:338-66 *F* '64

Health statisticians and the American public health association. F. E. Linder. *Am J Pub Health* 54:1005-6 *Je* '64

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Why belong to the American public health association? H. E. Hilleboe. *Am J Pub Health* 54:849-50 My '64

AMERICAN public power association

Convention, Jacksonville, Fla. Elec World 161: 44-5 Je 1 '64; Power Eng 68:46-7 Jl '64

AMERICAN public works association

Annual congress, Atlantic City. Eng N 173: 29 O 15 '64

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AMERICAN radio relay league

ARRL amateurs serve their country. *il diags Q S T* 48:66-76 Mr '64

ARRL and international amateur radio. *il diags Q S T* 48:64-79 My '64

ARRL DX competition, 1964 results. E. White, comp. *il Q S T* 48:22-33+ O '64

ARRL national convention, 13th. New York. Aug. 21-23; preview. *Q S T* 48:36-9 Ag '64

ARRL National traffic system. G. Hart. *diags Q S T* 48:43-43 Je '64

ARRL 1949-1953 sideband, tvl; and regulatory battles. *il map diag Q S T* 48:66-77 O '64

ARRL, 1954-1964, growth and stability. *il Q S T* 48:65-72+ N '64

ARRL, Red Cross renew agreement. *Q S T* 48:20-1 Ap '64

ARRL serves in wartime. *il diag Q S T* 48:66-77 Ag '64

ARRL; the boom years. *il Q S T* 48:70-85 Je '64

ARRL the early years. *il maps Q S T* 48:66-71 F '64

ARRL; the exciting years. *il diags Q S T* 48: 66-79 Ap '64

Announcing 1964 ARRL simulated emergency test. *Q S T* 48:86-7 O '64

Fifty years of ARRL. H. Hoover, jr. and others. *il Q S T* 48:65-74 Ja '64

League program. H. Hoover, jr. *Q S T* 48:31-5 Ja '64

More bands! *il Q S T* 48:66-78 S '64

National convention, New York, Aug. 22. *Q S T* 48:80-2 O '64

New ARRL message precedences. G. Hart. *Q S T* 48:44+ Ja '64

Your new league headquarters: illustrations with text. *Q S T* 47:71-3 D '63

AMERICAN road builders association

Annual meeting, 62d, New Orleans. Eng N 172:22 Mr 5 '64; Roads & Sts 107:78+ Ap '64

AMERICAN society for clinical nutrition

Annual meeting, 4th, Atlantic City, May 2; program and abstracts of papers. *Am J Clinical Nutrition* 14:237-52 Ap '64

AMERICAN society for engineering education

Annual meeting, 72d, Orono, Me. June 22-26. Eng N 173:60 Jl 2 '64; Mech Eng 86:80-1 Ag '64

AMERICAN society for quality control

Annual convention and exhibit, 13th, Buffalo, May 4-6; program and list of exhibitors. *Ind Quality Control* 20:33-40 My '64

Annual report of the board of directors. map *Ind Quality Control* 20:21-7 N '63

Annual report of the board of directors. map *Ind Quality Control* 21:204-12 O '64

National conference of the Automotive division, 7th, Detroit, Feb. 27; abstracts of papers. *Automotive Ind* 130:81-7 Ap 15 '64 1964-65 organization manual. *Ind Quality Control* 21:259-65 N '64

AMERICAN society for testing and materials

ASTM broadened its horizons in 1963. *il Materials Res & Stand* 4:29-31 Ja '64

ASTM D-11 subcommittee reports. *Rubber World* 149:93-8 Mr '64

ASTM grants-in-aid announced. *Materials Res & Stand* 4:328-9 Je '64

ASTM's administrative committee on standards. G. H. Harnden. *Materials Res & Stand* 3:923-4 N '63

Annual meeting, 67th, Chicago, June 20-26; with abstracts of papers. *Pit & Quarry* 57:134-7 S '64

Annual meeting, 67th, Chicago, June 21-26; abstracts of papers. *Materials Res & Stand* 4:433-9 Ag '64

Annual meeting, 67th, Chicago, June 21-26; preview, program, abstracts of papers and exhibits. *il Materials Res & Stand* 4:234-53 My '64

Board of directors meeting, Philadelphia, May 13. *Materials Res & Stand* 4:501-7 S '64

Coming publication year. *Materials Res & Stand* 3:926-29+ N '63

Committee D-11 on rubber and rubberlike materials meeting, Philadelphia, Feb. 5-7; reports. *Rubber Age* 94:958-9 Mr '64

Committee D-11 on rubber-like materials meeting, Chicago, June 22-26. *Rubber World* 150:83-6+ Ag '64

Committee D-12 on soaps and other detergents meeting, New York, March 9-10. *Soap & Chem Spec* 40:53-6 Ap '64

Honors and awards presented at annual meeting luncheon. *il Materials Res & Stand* 4: 442-52 Ag '64

Meeting of the ASTM committee B-8; Kansas City, Sept. 17-18. *Plating* 51:1080+ N '64

New ASTM publications. Published in monthly numbers of *Materials research & standards*

Statics and dynamics; president's address. L. V. Williams. *Materials Res & Stand* 4: 440-1 Ag '64

Why hold the 1965 annual meeting on a university campus? R. J. Painter. *il Material Res & Stand* 4:330-1 Je '64

AMERICAN society of body engineers

Annual convention; abstracts of papers. *Automotive Ind* 129:90 D 15 '63

AMERICAN society of civil engineers

ASCE activity in public affairs. *Civil Eng* 34: 35-7 Ag '64

ASCE annual meeting and first Structural engineering conference, Oct. 7-11; with abstracts of papers. *Civil Eng* 33:42-9 N '63

ASCE environmental engineering conference, Salt Lake City, May 11-15; program. *Civil Eng* 34:67-73 Mr '64

ASCE transportation engineering conference, Cincinnati, Feb. 17-21; program. *Civil Eng* 33:69-75 D '63

Annual meeting and structural engineering conference, New York; abstracts of papers. Eng N 173:11-12 O 29 '64

Annual meeting and structural engineering conference, New York, Oct. 19-23; program. *Civil Eng* 34:47-55 Ag '64

Board of direction meeting, San Francisco, Oct. 7-8. *Civil Eng* 33:74-5 N '63

Environmental engineering conference, Salt Lake City; with abstracts of papers. Eng N 172:59 My 21 '64

Hydraulics division conference, Vicksburg, Miss., Aug. 18-21; program. *Civil Eng* 34: 75-7 Je '64

Irrigation and drainage division conference, Los Angeles, Nov. 6-8. *Civil Eng* 33:40-2 D '63

Transportation conference, Cincinnati; with abstracts of papers. *Civil Eng* 34:40-6 Mr '64

AMERICAN society of heating, refrigerating and air-conditioning engineers

ASHRAE finances reviewed. W. L. McGrath. *ASHRAE J* 5:37-9 D '63

ASHRAE officers, directors, committeemen. *ASHRAE J* 5:97-8+ D '63

ASHRAE officers, directors, committeemen. *ASHRAE J* 6:92-4 Ap; 84-6 Ag; 85-7 O '64

Annual meeting, 71st, Cleveland. Heating-Piping 36:43-4 Ag '64

Annual meeting, 71st, Cleveland, June 29-July 1; program and abstracts of papers. *ASHRAE J* 6:67-86 Je; 46-63 Ag '64

Semiannual meeting, New Orleans, Jan. 27-29; program. *Air Cond Heat & Ven* 61:11+ Ja '64

Semiannual meeting, New Orleans, Jan. 27-29; program and abstracts of papers. *ASHRAE J* 6:48-83 Ja; 52-73 Mr '64

AMERICAN society of lubrication engineers

Annual meeting and lubrication show; Chicago, May 26-28; program. *Lub Eng* 20:120-2 Ap '64

AMERICAN society of mechanical engineers

ASME president, vice-presidents, directors nominated. *Mech Eng* 86:93-5 Ag '64

Annual meeting, Philadelphia; abstracts of papers. *Combustion* 35:23-9 Ja; 44-7 F '64

Annual report, 1962-63. *Mech Eng* 86:113-29 Ja '64

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Council report to the membership. *Mech Eng* 86:1R-12R S '64

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Joint AIPE-ASME plant engineering conference, Los Angeles, April 6-8; program. *Mech Eng* 86:110-11 F '64

Petroleum mechanical engineering conference, 18th, Tulsa, Okla. *Mech Eng* 85:103-5 N '63

Petroleum mechanical engineering conference, 19th, Los Angeles, Sept. 20-23; program. *Mech Eng* 86:37-9 Ag '64

Regional student conference, 1964; list of papers and prizes. *Mech Eng* 86:118-19 O '64

Student design contest. *diags Mech Eng* 86:127-9 Ap '64

AMERICAN society of mechanical engineers—*Continued*

Winter annual meeting, 84th, Philadelphia, Nov. 17-22, Mech Eng 86:84-103 Ja '64
 Winter annual meeting, 85th, New York, Nov 29-Dec 3, advance program, availability of papers, Mech Eng 86:92-112 O '64
 Winter annual meeting, Philadelphia, Nov. 18-22; abstracts of papers, Power Eng 68: 53-4 Ja '64

Woman's auxiliary announces mechanical engineering student awards, Mech Eng 85: 106-7 N '63

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 Design engineering conference
 National power conference

Gas turbine power division

Annual conference and products show, 9th, Houston, Mech Eng 86:169-70 Ap '64

AMERICAN society of naval engineers

ASNE day 1964, Naval Eng J 76:334-50+ Je '64

ASNE day 1965, Naval Eng J 76:509-10 Ag '64
 What is ASNE? Naval Eng J 76:594 Ag '64

AMERICAN society of tool and manufacturing engineers

Conference and exposition, Detroit, April 20-24; products on display, Mach 70:151-75 Ap '64

Engineering conference and tool exposition, Detroit, Apr. 20-24; with list of exhibitors and products on display, Tool & Manuf Eng 52:129-68 Ap '64

Engineering conference and tool exposition, Detroit, April 20-24; with preview of products, Steel 154:90-1, 143-4+ Ap 13 '64

Engineering conference and tool exposition, Detroit, April 20-24; with program, list of exhibitors and products on display, Iron Age 193:108+, 122+ Ap 9 '64

Introducing ASTM's 1964 honor award winners, Tool & Manuf Eng 52:95-6 My '64

AMERICAN standards association

American standard practice for roadway lighting, 11 diags Illum Eng 59:73-112 F '64
 Company member conference, Philadelphia, Nov. 6-7, Mag of Stand 35:7-11 Ja '64

AMERICAN vacuum society

Annual meeting, 11th; abstracts of papers, Res/Develop 15:66-9 N '64
 Founding of the American vacuum society, J. B. Merrill, Res/Develop 15:66-7 S '64

AMERICAN water works association

Annual conference, 83d, Kansas City, May 19-24; with program, list of exhibitors, officers and awardees, Am Water Works Assn J 58:1579-98 D '63

Annual conference, 84th, Toronto, May 31-June 5; abstracts of papers, Water Works & Wastes Eng 1:60-1 Je; 39+ JI; 47-8 Ag '64

Annual conference, 84th, Toronto, May 31-June 5; with program, list of exhibitors and floor plan, Am Water Works Assn J 56:sup 48+ Ap; sup60+ My '64; Water Works & Wastes Eng 1:85-7 My '64

Committee reports, publications and auditors' reports for the year ending Dec. 31, 1963; membership growth, membership awards, Am Water Works Assn J 56:480-518 Ap '64

Honors "better men" at record Toronto conference, Water Works & Wastes Eng 1:40-1 JI '64

Illinois section annual meeting, 55th, Chicago, March 17-20, Water & Sewage Works 111: 299 Je '64

Indiana section, annual meeting, 56th, Indianapolis, Feb. 5-7, Water & Sewage Works 111:287 Je '64

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Progressing toward AWWA's objectives; presidential address, J. G. Copley, Am Water Works Assn J 56:1-3 Ja '64

Then as now, better men for better service; address by past-president at AWWA conference, Toronto, J. G. Copley, Am Water Works Assn J 56:823-4 JI '64

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Annual meeting and exposition, Detroit, May 6-7; with presidents address, Welding J 43: 522+ Je '64

Annual meeting and exposition, 45th, Detroit, May 4-8; with preview of exhibits, Steel 154:53+, 115-16+ Ap 27 '64

Annual meeting and welding show, 45th, Detroit, May 4-8; abstracts of papers, Steel 154:139+ My 4 '64

Annual meeting, 45th, and ASME metals engineering conference, Detroit, May 4-8; program and list of exhibitors, Welding J 43: 317-22, 336-40 Ap '64; Welding Eng 49:60+ Ap '64

Fall meeting, Boston, Sept. 30-Oct. 3; with program, Welding J 42:731-2+, 896+ S, N '63

National fall meeting, San Francisco, Oct. 5-8; program, Welding J 43:768-72 S '64

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Automobile sales buildings

Balconies

Beach architecture

Bridges—Architecture

Building materials

Buildings

Cathedrals

Ceilings

Childrens homes

Church architecture

Clinics

Clubhouses

College architecture

Concrete construction

Convents

Courts (architecture)

Dairies

Department stores

Embassy buildings

Exhibition buildings

Facades

Fire houses

Flashing

Greenhouses

Hillside architecture

Interior decoration

Library buildings

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Monuments

Moving picture theaters

Municipal centers

Museums

Music halls

Nurses homes

Nursing homes

Office buildings

Offices

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Partitions
Pavilions
Police stations
Prisons
Public buildings
Remodeling (architecture)
Shelters
Shoe stores
Skis and skiing—Stations, lodges, etc.
Stadiums
Tennis courts, indoor
Theaters
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Berlin
Boston
Buenos Aires
Chicago
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Honolulu
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Hydroelectric plants
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Irrigation

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 Architecture, Domestic
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 Gas, Natural
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- Electric industries
- Electric lines
- Electric plants (central stations)
- Electric utilities
- Electricity supply
- Electronics industry
- Engineering
- Engineering education
- Engineers
- Fertilizer industry
- Fuel supply
- Gas, Natural
- Gas, Natural—Pipe lines
- Gasoline industry
- Geology
- Iron industry and trade
- Iron mines and mining
- Iron ores
- Metal trade
- Mineral industries
- Mines and mineral resources
- Mining industry and finance
- Oil shales
- Paper industry and trade
- Petroleum
- Petroleum industry and trade
- Petroleum pipe lines
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 - Evaporators
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Car cleaning
Cleaning machinery
Cotton cleaning
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Laundry
Metal cleaning
Sewer cleaning
Shot blasting
Tunnel cleaning
also subdivision Cleaning under special subjects, e.g.
Castings
Food factories
Lubrication and lubricants (cutting and grinding)
Machinery
Motor trucks
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Pipes
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- Boilers—Firing
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Concrete placing
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Electrohydraulic control

Electronic control

Electropneumatic control

Feedback control systems

Governors (machinery)

Hydraulic control

Liquid level control

Machinery, Automatic

Magnetic control

Numerical control

Pneumatic control

Servomechanisms

Telemetering

Temperature—Regulation

also subdivision Control and Control equipment under special subjects, e.g.

Air conditioning equipment

Airplanes

Airplanes, Military

Atomic power plants

Bakers and bakeries

Blast furnaces

Boilers

Cement plants

Chemical plants

Concrete plants

Cotton mills

Cranes, derricks, etc.

Crushing machinery

Diesel engines

Diesel engines, Marine

Electric plants (central stations)

Elevators

Gas burners

Gas compressors

Gas turbines

Guided missiles

Heat exchangers

Heat treatment shops

Helicopters

Hydroelectric plants

Lathes

Machine tools

Machinery

Metal working plants

Metallurgical plants

Milling machines

Nuclear reactors

Packaging machinery

Paper and pulp mills

Paper cutting machines

Paper making machinery

Petroleum refineries

Plastics machinery

Plating shops

Power plants

Presses

Printing presses

Pumping machinery, Electric

Pumps, Feed water

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Electric driving—Conveying machinery

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Mechanical handling

Mine haulage

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Cryostats
Heat convection
Heat pump
Heat transmission
Refrigeration and refrigerating machinery

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Cooling water
Metals, Cold working of
Quenching
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Steel, Quenching of
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Electric equipment
Electric generators
Electric generators, Alternating current
Electric generators, Synchronous
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- Galvanizing
- Metal coating
- Metal protection

Paint, Protective**Passivity****Water purification—Corrosion control****Water supply—Corrosiveness**

also subdivision Corrosion under special subjects, e.g.

Aluminum**Automobiles****Boilers****Chemical plants****Copper****Heat exchangers****Lead****Nickel****Oil tanks****Petroleum—Well casing****Petroleum—Well tubing****Petroleum refineries****Silver****Steam pipes****Steam turbines****Water pipes****Stress corrosion**

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Atomic power plants
Bridges
Building
Channels
Chemical plants
Concrete construction
Dams
Dredging
Electric plants (central stations)
Gasoline plants
Lighting
Paper and pulp mills
Petroleum refineries
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 Modular coordination (architecture)
 Structures, Theory of
 Textile design
 Volcanic eruptions
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 Airplanes
 Airplanes, Supersonic
 Airports
 Amplifiers
 Atomic power plants
 Automobile engines
 Automobiles
 Bearings
 Chemical plants
 Concrete construction
 Cranes, derricks, etc.
 Diesel engines
 Electric circuit breakers
 Electric generators. Direct current
 Electric plants (central stations)
 Electric transformers
 Electronic circuits
 Factories
 Heat exchangers
 Helicopters
 Hydroelectric plants

DESIGN—See also—*Continued*

- Internal combustion engines
Machine tools
Machinery
Pistons
Power plants
Pressure vessels
Radio transmitters
Sewage disposal plants
Steam plants
Structural engineering
Tractors, Farm
Water tanks
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See also

- Aeroelasticity
Bending
Bending moment
Compressibility
Creep of materials
Deformation (mechanics)
Fatigue in metals
Friction, internal
Hysteresis (mechanics)
Photoelasticity
Elasticity
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Strains and stresses
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See also

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Commutators
Electric alarms
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Electric current limiters
Electric equipment
Electric fuses
Electric generators
Electric industries
Electric instruments
Electric inverters
Electric lamps
Electric machinery
Electric meters
Electric motors
Electric protective apparatus
Electric rectifiers
Electric switchgear
Electric transformers
Electricity in mining
Electricity on the farm
Electromagnets
Electronic apparatus and instruments
Photoelectric cells
Potentiometers
Relays
Selsyn apparatus
Spark plugs
Storage batteries
Switchboards
Transducers
Voltage regulators

Directories

See Electric apparatus industry—Directories

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Electric driving

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Electric switchgear

Electric transmission

Electricity in mining

Electricity on the farm

Switchboards

also subdivision Electric equipment under special subjects, e.g.

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Airports

Apartment houses

Automobiles

Brass works

Cars

Chemical plants

Coal mines and mining

College buildings

Cranes, derricks, etc.

Department stores

Exhibition buildings

Factories

Food factories

Guided missile bases

Hospitals

Office buildings

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Pumping stations
Railroads
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See also

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Dielectrics
Electric currents
Electroacoustics
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Coal mines and mining—Power
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Petroleum industry and trade
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Bridges—Foundations and piers
Dredging
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Agricultural machinery
Air conditioning equipment
Architecture
Atomic power
Automation

EXHIBITIONS—See also—*Continued*

Automobiles
Chemical industries
Construction equipment
Control equipment
Electric apparatus and appliances
Electronic apparatus and instruments
Gas industry
Graphic arts
Heating equipment
Household products
Instruments
Mechanical handling
Motor buses
Motor cycles
Motor trucks
Office appliances
Packaging
Petroleum equipment industries
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 Detonation
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 Inflammable mixtures
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Airplane factories

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FORD CITY, Pennsylvania**Sewerage**

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Aerodynamics

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Boyle law
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Chlorine
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Equation of state
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Furnaces, Carburizing—Atmosphere control
Gas, Natural
Gas analysis
Helium
Hydrogen
Inflammable mixtures
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Hydrogen, Liquid

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Coal trade
Drug trade
Dye industry
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- Building—Heating aspects
- Chimneys
- Electric heaters
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- Fuel
- Gas heaters
- Gas heating
- Heat pump
- Heating, Warm air
- Heating, from central stations
- Hot water heating
- Insulation (heat)
- Lighting—Heating aspects
- Oil burners
- Oil heaters
- Refractory materials
- Solar heating
- Steam heating
- Swimming pools—Heating
- Ventilation

also subdivision Heating and ventilation under special subjects, e.g.

- Air raid shelters
- Apartment houses
- Barns and stables
- Chemical laboratories
- Churches
- College buildings
- Factories
- Grandstands
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Storage type

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- Engineers
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- Hydroelectric plants
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- Machine tool industry
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See also

Christmas lighting
Daylight
Daylight, Artificial
Electric lamps
Gas lighting
Glare
House lighting
Light projection
Office lighting
Photometry
Searchlights
Street lighting
Tunnel lighting

also subdivision Lighting under special

subjects, e.g.
Aeronautic instruments
Airplanes
Airport buildings
Airports
Auditoriums
Automobile sales buildings
Bakers and bakeries
Bank buildings
Bridges
Canal
Capitols
Chemical plants
Churches
College buildings
Courthouses
Dairies
Dentists offices
Department stores
Dining rooms
Electric plants (central stations)
Entrances
Exhibition buildings
Exhibition grounds
Factories
Fountains
Gardens
Golf links
Golf links, Miniature
Gymnasiums
Hangars
Heliports
Hospitals
Hotels
Jewelry stores
Kitchens
Laboratories
Library buildings
Mens stores
Moving picture photography
Museums
Paper and pulp mills
Photography
Printing offices
Race tracks
Restaurants
Roads
School buildings
Shoe stores
Shopping centers
Show windows
Showrooms
Sidewalks
Stadiums
Supermarkets
Swimming pools
Tennis courts, Indoor
Textile mills
Theaters
Underpasses
Warehouses
Womens apparel shops

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 Airplane engines
 Automobile engines
 Automobiles
 Bearings
 Bearings, Ball
 Bearings, Roller
 Compressors
 Construction equipment
 Diesel engines
 Gas engines
 Gearing
 Internal combustion engines
 Knitting machines
 Machine tools
 Mining machinery
 Motor truck engines
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Machine shops—Records

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Arbors and mandrels
Assembling methods
Bending
Broaching
Centering (machine work)
Chucks
Dies
Drafting room practice
Drilling and boring (metal working, etc.)
Forking
Foundry practice
Gages
Gear cutting
Grinding
Grinding machines
Grooving
Hard facing
Indexing (machine work)
Inspection
Lathes
Machine tools
Machinery
Metal cutting
Milling
Pattern making
Riveting
Sheet metal work
Stamping
Thread cutting
Tolerance
Turning
Welding

also subdivision **Manufacture under spe-**

cial subjects, e.g.
Automobile engines
Bearings
Bearings, Roller
Cams
Crankshafts
Cylinders (engines, etc.)
Diesel engines
Electric motors
Gas turbines, Aircraft
Gearing
Guided missiles
Guns (ordnance)
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Motor trucks
Pistons
Rockets
Rolls (rolling mills)
Shafts
Space vehicles

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Machine tools

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 Broaching machines
 Chucking machines
 Cutting machines
 Cutting tools
 Drilling and boring machinery
 Gear cutting machines
 Grinding machines
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 Honing machines
 Lapping machines
 Lathes
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 Spindles (machine tools)

Tapping machines
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Beryllium
Brass
Copper
Iron
Magnesium
Nickel
Steel
Tantalum
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Blast furnaces

Metallurgical laboratories

By-products

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Cesium metallurgy
Cobalt metallurgy
Copper metallurgy
Electrodeposition of metals
Electrometallurgy
Flotation process
Furnaces, Metallurgical
Gold metallurgy
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International mineral processing congress
Iron metallurgy
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Sodium
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Los Angeles—Metropolitan district
New York (city)—Metropolitan district
Winnipeg, Manitoba—Metropolitan district

MEXICO

See also subdivision Mexico under spe-cial subjects, e.g.
Architecture
Electricity supply
Gas, Natural
Gas, Natural—Pipe lines
Geology
Iron mines and mining
Irrigation
Mines and mineral resources

MEXICO—See also—*Continued*

Petroleum
Petroleum industry and trade
Petroleum pipe lines
Petroleum products pipe lines
Telephone

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Biotite
Muscovite
Phlogopite

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MICHIGAN

See also subdivision Michigan under special subjects, e.g.

Copper mines and mining
Electricity supply
Gas, Natural
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Petroleum
Petroleum industry and trade

Roads**MICROANALYSIS**

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also subdivision Moisture content under

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- NAS drafts guidelines for research support. *Chem & Eng N* 42:27-8 Mr 23 '64
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NATIONAL association of home builders

- NAHB policies facing revision. *Eng N* 173:17-18 S 3 '64

NATIONAL association of lighting maintenance contractors

- Meeting, Denver, April 15-17. *Elec Constr & Maint* 63:184-6 Je '64

NATIONAL association of photo-lithographers

- Annual convention, 31st, Chicago, Nov. 13-16; with program. *Inland Ptr/Am Lithogr* 152:52-3 N; 97 D '63

- Annual convention, 32d, New York, Sept. 9-12; with program. *Inland Ptr/Am Lithogr* 153:68-9 S; 154:100+ O '64

NATIONAL bituminous concrete association

- Annual meeting, 9th, New Orleans. *Roads & Sts* 107:124+ Ap '64

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- Convention, 47th, New York, June 15-17; with abstracts of papers. *Coal Age* 69:112-15 Jl '64

NATIONAL conference of electric and gas utility accountants

- Conference, Cincinnati, April 20-22. *Am Gas Assn Mo* 46:25-7 Je '64

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- Conference, 19th, Chicago; abstracts of papers. *Product Eng* 34:72-3 N 11 '63

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- Conference, 14th, Mag of Stand 35:99-115 Ap '64

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NATIONAL crushed stone association

- Annual meeting, 47th, Chicago, Feb. 24-27; with abstracts of papers. *Pit & Quarry* 56:101-5+ Ap '64; *Rock Prod* 67:73+ Ap '64

- Board of directors annual summer meeting, Absecon, N.J. July 16-17. *Pit & Quarry* 57:130-2 S '64; *Rock Prod* 67:115+ S '64

NATIONAL electrical code

- Code forum. Published in monthly numbers of Electrical construction and maintenance

- Electric comfort heating, 1964. W. J. Novak. *diags Elec Constr & Maint* 63:67-82 F '64
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NATIONAL electrical contractors association

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- District 4 annual meeting, French Lick, Ind., May 5-7; abstracts of papers. Elec Constr & Maint 63:190-3 J1 '64
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- District 6, 8, 9 conference, Honolulu, May 20-26; abstracts of papers. Elec Constr & Maint 63:194-6 J1 '64

NATIONAL electrical manufacturers association

- Annual meeting, 37th, Chicago. Elec World 160:31+ N 4 '63; Wire & Wire Prod 39:98-9+ Ja '64

NATIONAL engineering laboratory. See Great Britain—National engineering laboratory**NATIONAL foundry association**

- Annual meeting, 65th, Chicago, Nov. 7-8. Foundry 92:124+ Ja '64
- Annual meeting, 66th, Philadelphia, Oct. 1-2. Foundry 92:167+ N '64

NATIONAL institute of ceramic engineers

- Membership roster. Am Cer Soc Bul 43:823+ O '64

NATIONAL lime association

- Annual meeting, 62d, Point Clear, Ala. May 11-13. Rock Prod 67:93-5 J1 '64
- Annual meeting, 62d, Point Clear, Ala. May 11-13; with abstracts of papers. Pit & Quarry 57:189-92+ J1 '64

NATIONAL limestone institute

- Annual convention, 18th, Washington, Jan. 20-22; with abstracts of papers. Pit & Quarry 56:96-100+ Mr '64; Rock Prod 67:106+ Mr '64

- Board meeting, New York, July 26-31. Rock Prod 67:109+ S '64

- Midyear meeting, New York, July 26-31. Pit & Quarry 57:84-7 O '64

NATIONAL machine tool builders association

- Annual meeting, Hollywood Beach, Fla. Nov. 20-22. Am Mach/Metalworking Manuf 107:93-4 D 9 '63; Mach 70:122 Ja '64
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- Spring meeting, 62d, Chicago, May 7-8. Am Mach 108:69-70 My 25 '64; Mach 70:159 Je '64

NATIONAL metal congress

- Metals/materials congress and exposition, Philadelphia, Oct. 19-23; program, list of exhibitors and abstracts of papers. Metal Prog 86:P 1-40, 240+ O '64

- Metals/materials exposition and congress, Philadelphia, Oct. 19-23; with program and list of exhibitors. Iron Age 194:148+ O 8 '64; Materials in Design Eng 60:137+ O '64

NATIONAL metal exposition

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- NATIONAL physical laboratory, Teddington.** See Great Britain—National physical laboratory, Teddington

NATIONAL power conference

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NATIONAL rural electric cooperative association

- Convention, Dallas. Elec World 161:113-14 Mr 23 '64

NATIONAL safety council

- National safety congress, Chicago, Oct. 28-31; abstracts of papers. Pit & Quarry 56:126-8+ D '63

NATIONAL sand and gravel association

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- Science ain't everything. W. R. Marshall, Jr. Il Chem Eng Prog 60:17-21 Ja '64

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- Share 1963 Nobel chemistry prize. por Rubber Age 94:459 D '63

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- Gas. *Natural*
- Gas industry
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- Petroleum industry and trade
- Plastics industries
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- Shipping
- Steel works
- Textile industry
- Vocational education

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NEVADA

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Gas, Natural
Geology
Iron mines and mining
Iron ores
Mines and mineral resources
Petroleum
Petroleum industry and trade

NEW BRUNSWICK*See also*

Geology—New Brunswick
Mines and mineral resources—New Brunswick
Tin mines and mining—New Brunswick

NEW ENGLAND*See also*

Electronics industry—New England
Hydroelectric plants—New England

NEW GUINEA*See also*

Birds—New Guinea

Nutrition problems—New Guinea

NEW HAMPSHIRE*See also*

Architecture, Domestic—New Hampshire

Floods—New Hampshire

Geology—New Hampshire

NEW JERSEY*See also* subdivision New Jersey under

special subjects, e.g.

Airports

Architecture, Domestic

Atomic power plants

Hydroelectric plants

Petroleum products pipe lines

Roads

NEW MEXICO*See also* subdivision New Mexico under

special subjects, e.g.

Coal mines and mining

Copper mines and mining

Gas, Natural

Geology

Mines and mineral resources

Petroleum

Petroleum laws and regulations

Potash mines and mining

Public health

Roads

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Airports—New York (city)

Building—New York (city)

Building laws and regulations—New York (city)

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Gas, Natural
Geology
Hydroelectric plants
Mines and mineral resources
Petroleum
Petroleum industry and trade
Public works
Sewerage
Water supply

NEW YORK state association of electrical contractors and dealers
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NEW ZEALAND
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NEWARK, New Jersey

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Airports—Newark, New Jersey

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Circulation systems

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See also**Ear-Injuries****Ear-Protection****Radio communication-Interference****Radio communication-Interference elimination**

NOISE—See also—Continued

- Silencers
Soundproofing
also subdivision Noise under special subjects, e.g.
Air compressors
Air conditioning equipment
Airplanes
Airplanes, Jet propelled
Amplifiers
Amplifiers, Vacuum tube
Automobile engines
Automobiles
Diesel engines, Automotive
Electric fans
Electric lamps, Fluorescent
Electric transformers
Electronic apparatus and instruments
Fans, Mechanical
Gas burners
Gas turbines
Gas turbines, Aircraft
Helicopters
High fidelity sound systems
Light amplifiers
Machinery
Magnetic tape
Oscillators
Pneumatic machinery
Pneumatic tools
Pumps, Centrifugal
Radio receiving apparatus
Radio resistors
Refrigerators
Rock drills
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Gold ores
Iron ores
Lead ores
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Uranium ores
Zinc ores
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Ore ships

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Flotation process
Gold metallurgy
Hydrometallurgy
International mineral processing congress
Iron metallurgy
Magnetic separation of ores
Metallurgical plants
Metallurgy
Screening
Sintering
Smelting
Tailings

OREGON

See also subdivision Oregon under special subjects, e.g.

Geology
Hydroelectric plants
Mines and mineral resources
Petroleum
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Labels

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Food packages

Fruit—Prepackaging

Labels

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Closures (containers)

Food packages

Food packaging

Fruit—Prepackaging

Meat—Prepackaging

Packing for shipment

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with text. Food Eng 36:115 J1 '64

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PACKAGING machinery

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display. Il Food Eng 36:56-62 Je '64

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Aluminum foil
Cellophane
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Gaskets
Seals
Stuffing boxes
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PACKING for shipment—Continued

Total design approach halves package bill;
Clarke floor machine co. *il* Steel 153:64 N 11 '63

See also

Containers (for shipping)
Crates
Fruit—Prepackaging
Nylon straps
Rayon straps
Shipment of goods
Steel straps

PACKING houses**By-products**

For bone degreasing; a package plant. *il* En-
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Equipment

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- Paint, Anti-fouling
- Paint, Fire resisting
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- Paint, Protective
 Paint removers
 Paint spraying
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 Airplanes
 Airplanes, Military
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PAKISTAN

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- Engineering—Pakistan
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Food industry and trade

Foundry practice

Glass machinery

Glass manufacture

Hair preparations

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Cerium phosphates
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Electromagnetic theory
Electrons
Evaporation
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Fluids
Force and energy
Free energy
Friction
Geophysics
Gravitation
Gravity
Heat transmission
Hydraulics
Inertia (mechanics)
Ionization, Gaseous
Ions
Light
Liquids
Magnetism
Meteorology
Molecules
Music—Acoustics and physics
Neutrons
Nuclear physics
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Photoelasticity
Plasma (physics)
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Porosity
Pressure
Quantum theory
Radiation
Reflection (optics)
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Plastics engineering
Printing on plastics
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also subdivision *Plastics under special subjects, e.g.*

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RECOMBINATION of ions. See Ions—Recombination**RECONNAISSANCE, Military.** See Military reconnaissance**RECONSTITUTED milk.** See Milk, Reconstituted**RECORD changers.** See Phonograph—Record changers**RECORDING instruments**Inks for instrumentation. *Gas* 40:101+ F; 121+ Mr '64Instrument pens. *Gas* 40:81+ Ap; 107+ My '64Radio-linked tide gauges in the Thames estuary. *il* diags Engineer 216:349-50 N 22 '63Recording instruments prove out for Cascade. *il* *Gas* 40:62-3 S '64

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ROCKY MOUNTAIN region

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ROLLERS

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Thread rolling

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Paper and pulp mills
Petroleum industry and trade
Petroleum refineries
Power plants
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Quarries and quarrying
Roads
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Centrifugation
Crystallization
Distillation

Extraction apparatus

Extraction processes

Filtration process (non-metals)

Hydrocarbons—Separation processes

Ion exchange

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Centrifuges

Classifiers

Concentrators

Crystallizers

Dust collectors

Evaporators

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Sewage incinerators
Sewage pumping
Sewage sludge
Sewage tanks
Sewer pipes
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Activated sludge method

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Sewage disposal

Sewer cleaning

Sewer design

Sewer pipes

Water pollution

also subdivision Sewerage under names of places, e.g.

Boston

Boulder, Colorado

Brigham City, Utah

Cicero, Illinois

Columbia, South Carolina

Eustis, Florida

Ford City, Pennsylvania

Fort Lauderdale, Florida

Fort Worth, Texas

Foster City, California

Garner, North Carolina

Glasgow

Houston, Texas

Karachi, Pakistan

Lawrenceburg, Indiana

Lebanon, Pennsylvania

Little Falls, Minnesota

London

Los Angeles

Louisville, Kentucky

Magna, Utah

Massillon

Mexico (city)

Minneapolis

Miramar, Florida

Missoula, Montana

Modesto, California

New Orleans

New York (city)

Newton, Ohio

Ottawa

Philadelphia

Portland, Maine

Rio de Janeiro

Rocky River, Ohio

St Louis

St Paul

San Diego

San Jose, California

Santa Clara, California

Seattle

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SEWERS. Concrete

See also

Sewer pipes, Concrete

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- Rolling mills
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Lapis lazuli
Lead silicates
Manganese silicates
Mica
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Concrete, Reinforced
Concrete construction
Control equipment
Drafting room practice
Electric apparatus and appliances
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Electric substations
Electric wiring
Electronic apparatus and instruments
Electronics
Gas appliances
Gearing
Household products
Hygiene, Industrial
Lenses
Lighting
Lubrication and lubricants
Lumber

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Shelving, Steel
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Apples
Chemicals
Cotton
Eggs
Fish as food
Food
Food, Frozen
Fruit
Gas, Natural
Liquefied petroleum gas
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Propane
Propellants
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Shoe stores

Shopping centers

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Grocery stores

Shoe stores

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Receiving departments

Storage

Textile mills—Stores systems

Tool rooms

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STOVES, Electric. See Electric stoves

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Airport buildings
Petroleum products pipe lines—Terminals
Petroleum shipping terminals
Ports
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See also

American society for testing and materials

Impact

Laboratories

Magnetic testing

Testing machines

also subdivision Testing under special subjects, e.g.

Aeronautic instruments

Airplane engines

Airplane parts

Airplanes, Military

Automobile parts

Beams and girders

Bearings, Ball

Bridges, Concrete

Building materials

Castings

Ceramic materials

Concrete

Corrosion and anti-corrosives

Corrosion resisting materials

Cotton fibers

Drying apparatus

Electric apparatus and appliances

Electric apparatus and appliances, Domestic

Electric cables

Electric equipment

Electric generators

Electric lines

Electric resistors

Electric welding

Finishing materials

Foundation soils

Gages

Gas engines

Gas meters

Gas turbines, Aircraft

Gasoline

Glass

Guided missiles

Hardness

Hydraulic machinery

Internal combustion engines

Joints

Lenses

Lubricating greases

Materials

Metals

Mortar

Mothproofing preparations

Nuclear reactors

Paint

Paper

Pipes, Steel

Pitch

Plastics

Polyethylene

Polymers

Radio apparatus

Rubber

Rubber, Artificial

Steam turbines, Marine

Steel castings

Television receiving apparatus

Titanium alloys

Trade waste

Transistors

Tubes

Tubes, Steel

Water

Watt hour meters

TESTING and materials, American society for.

See American society for testing and materials

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Engineering laboratories

Sound laboratories

Underwriters laboratories, inc

Electric equipment

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TEXACO. See Texas company

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Electric utilities
Fertilizer industry
Gas, Natural
Gas, Natural—Pipe lines
Geology
Hydroelectric plants
Irrigation
Petroleum
Petroleum industry and trade
Petroleum laws and regulations
Petroleum pipe lines
Water supply

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See also

Wool—Analysis

TEXTILE ASSOCIATIONS

See also

American association of textile chemists and colorists

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TEXTILE CHEMISTRY

See also

Bleaching
Cotton—Chemistry
Cotton finishing
Dyes and dyeing—Chemistry
Fireproofing of textiles

TEXTILE chemistry—See also—Continued

Rayon finishing
Resinous products—Textile uses
Sizing (textiles)
Textile fibers, Synthetic
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TEXTILE chemists and colorists, American association of. See American association of textile chemists and colorists**TEXTILE design**

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See also

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See also

Bleaching

Carpets

Crimping of textiles

Drapery

Elastic fabrics

Felt

Fireproofing of textiles

Knit goods

Military fabrics

Napping of textiles

Nylon fabrics

Pile fabrics

Rubberized fabrics

Textile finishing

Textile industry

Textile printing

Tire fabrics

Underwear

Upholstery

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Mine haulage

Motor trucks

Motor vehicles

Ore transportation

Packing for shipment

Petroleum pipe lines

Ports

Railroads

Rapid transit

River traffic

Shipping

also subdivision Transportation under special subjects, e.g.

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Motor vehicles
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Hydroelectric plants
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Air filters
Air pollution
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Cooling
Dust removal
Electric fans
Exhaust systems
Fans, Mechanical
Mine ventilation
Tunnel ventilation

also subdivision Heating and ventilation or Ventilation under special subjects, e.g.

Air raid shelters
Apartment houses
Automobiles
Barns and stables
Chemical laboratories
Churches
College buildings
Factories
Gas appliances
Greenhouses
Hospitals
Laboratories
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Motels
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Filtration plants
Hot water supply
Reservoirs
Water, Underground
Water conservation
Water consumption
Water distribution
Water purification
Water storage
Water supply engineering
Water tanks
Water waste

Watersheds**Waterworks****Wells**

- also subdivision Water supply under names of places, e.g.
Albion, New York
Atlanta
Auburn, Maine
Augusta, Wisconsin
Beaufort, South Carolina
Bellevue, Nebraska
Boston
Brawley, California
Buckeye, Arizona
Chester, Pennsylvania
Chicago
Dallas
Denver
Eugene, Oregon
Foster City, California
Gladstone, Oregon
Grand Rapids, Michigan
Greenville, Illinois
Hollywood, Florida
Jackson, Mississippi
Lima, Ohio
London
Los Angeles
Manchester, England
Naval bases
New York (city)
Oak Harbor, Washington
Oregon, Ohio
Pasadena, California
Pendleton, Oregon
Phoenix, Arizona
Portsmouth, Virginia
Rapid City, South Dakota
Richland, Washington
Richmond, Indiana
Rio de Janeiro
Rivermines, Missouri
San Antonio, Texas
San Francisco
Santa Ana, California
Seattle
Toronto
Troy, New York
Vernon, California
Washington, D.C.
Wauwatosa, Wisconsin
Winston-Salem, North Carolina
York, Pennsylvania

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Paraguay

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Pennsylvania

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Texas

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See also

Intakes
 Irrigation
 Irrigation water
 Pipe laying
 Reservoirs
 Water distribution
 Water hammer
 Water storage
 Waterworks
 Wells

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- Shipbuilding—Welding operations
- Solder and soldering
- Ultrasonic welding
- also subdivision Welding under special subjects, e.g.
- Aluminum
- Beryllium
- Cast iron
- Copper
- Magnesium
- Nickel
- Niobium
- Pipe lines
- Piping
- Piping (power plants)
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- Building
Electric lines
Electricity supply
Electronics industry
Gas, Natural
Gasoline industry
Geology
Mines and mineral resources
Petroleum
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